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DEVELOPMENT DIGEST

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SCENE BRINGING TOGETHER ELEMENTS
OF URBAN INCOME DISTRIBUTION
[PHOTO: U.S. AGENCY FOR INTERNATIONAL
DEVELOPMENT]

Employment and Income Distribution in the 1970s: A New Perspective

Mahbub ul Haq

[A prominent economist and planner questions the prevailing economic analyses of the development process and the policies deriving therefrom. High rates of overall economic growth have proved to be no guarantee that poverty and unemployment are reduced. He proposes setting employment and minimum living standards as the primary goals to which production and investment should be adapted.]

When I was asked to speak on employment strategy, I began a search of the literature on employment, all the theories and policy prescriptions that the economists and practitioners in the field had to offer, and I made some distressing discoveries. First, it appears to me that we simply do not know the nature and dimensions of the unemployment problem. Estimates of 5-10 percent unemployment and 20-25 percent underemployment are tossed around with a casualness which is simply frightening. There is no agreed methodology for measuring unemployment or underemployment, no generally accepted ideas or projections on what has happened in this field in the 1960s or what might happen in the 1970s, and very poor knowledge about this vital concern even in some of the largest and most affected countries like India, Pakistan and Brazil.

Second, despite lack of information, we economists do not hesitate to give policy prescriptions for unemployment. The favorite prescription—besides doubling or tripling of growth rates—is to correct the price system, particularly exchange rates, interest rates,

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terms of trade between agriculture and industry, and prices of all factors of production. But has this faith in price adjustments been tested empirically? When various developing countries corrected their exchange rates or interest rates at various times, was this followed by a great upsurge in their employment, or merely by better utilization of capital, larger output and higher labor productivity? In any event, how large a segment of the economy does the price adjustment affect in countries where there is a large subsistence sector and the modern industrial sector contributes no more than 10 percent to total output? No one suggests that price corrections will not move these economies in the right direction. But are they decisive, or do they make only a marginal impression on the unemployment problem? We need far more empirical evidence before we can pass any overall judgments.

Third, there is a fashion these days to talk about intermediate technology, something more labor-intensive and more suited to the needs of the developing countries than the technology presently used in the developed world. But where does it exist? I found very little evidence of it in the developed countries, which have no real incentive for fashioning special technology for the developing countries and which export a good deal of their technology under tied assistance. There are no great improvisations going on in the developing countries themselves, and no major research institutes are devoting their energies to the development of intermediate technology aside from a small group in Britain, operating on a shoestring budget. [See Development Digest, January 1969, pp. 46-48 for a description of this group and another in the U.S.] The only place where I found something resembling intermediate technology was in Mainland China, but there has not been much transfer of it to the developing countries.

Fourth, I found in the literature on employment abundant suggestions that the developed world should open up its markets to the labor-intensive products of the developing countries. We have detected no impatience on the part of any developed country to follow this prescription, however.

Finally, looking at the national plans of the developing countries, it is obvious that employment is usually a secondary, not a primary, objective of planning. It is generally added on as an afterthought to the growth target in gross national product (GNP), but is poorly integrated in the framework of planning. Recalling my own experience with the formulation of Pakistan's five year plans, the chapter on employment strategy was always added at the end to round off the plans and make them look complete and respectable. In fact, most of the developments which affected the employment situation favorably, such as the rural works program and green revolution, were planned primarily for higher output and their employment-generating potential

was accidental. There were a number of research teams, our own and foreign, fixing up our national accounts and ensuring that they adequately registered our rate of growth; there was not a fraction of this effort devoted to employment statistics. It has been assumed, far too readily, that high rates of growth will ensure full employment as well. But what if they don't? A sustained 6 percent rate of growth in Pakistan in the 1960s was accompanied by rising unemployment, particularly in East Pakistan. And what happens if the developing countries cannot achieve the high growth rates of 10 percent or more that it may take to eliminate unemployment, and are confined to 5-6 percent over the present decade? Should they quietly accept rising unemployment, and the social and political unrest that accompanies it, as the inevitable price for not growing any faster?

Uncomfortable questions of this kind led me to a re-examination of the overall theory and practice of development. We simply do not know whether problems associated with dire poverty have increased or decreased or what real impact the growth of GNP has made on them. We do know that many rates of growth, as measured by the increase in GNP, have been fairly respectable in the 1960s, certainly by historical standards, and that some developing countries have achieved a high rate of growth over a sustained period. But has this made a dent on the problems of mass poverty? Has it resulted in a reduction in the worst forms of poverty—malnutrition, disease, illiteracy, shelterless population, squalid housing? Has it meant more employment and greater equality of opportunities? Has the character of development conformed to what the masses really wanted?

There are a few indices, and they are rather disquieting. A recent study in India shows that 40-50 percent of the total population has a per capita income below the official poverty line where malnutrition begins, and the per capita income of this group has declined over the last two decades while the average per capita income went up. In Pakistan, which experienced a healthy growth rate during the 1960s, unemployment increased, real wages in the industrial sector declined by one third, per capita income disparity between East and West Pakistan nearly doubled, and concentrations of industrial wealth became an explosive issue. And in 1968, while the GNP growth rate was at its peak, the system exploded—not only for political reasons but from economic unrest. Brazil has achieved a growth rate close to 7 percent but continuing maldistribution of income continues to threaten the fabric of its society. These instances can be multiplied. There is need for much more work in this field, but the essential point is that a high growth rate has been, and is, no guarantee against worsening poverty and political explosions.

What has gone wrong? We were confidently told to take care of the GNP and poverty will take care of itself, that a high GNP growth target

is the best guarantee for eliminating unemployment and redistributing incomes later through fiscal means. Where did the development process go astray? My feeling is that it went astray at least in two directions. First, we conceived our task not as the eradication of the worst forms of poverty but as the pursuit of certain high levels of average income. We thought that the latter after all is a necessary condition for the former, but we did not in practice give much thought to the interconnection. The developing countries, with our guidance, have chased the elusive per capita income levels of the rich nations, they constantly worried about "how much was produced and how fast," they cared much less about "what was produced and how it was distributed." The hot pursuit of GNP growth was not necessarily wrong, but it blurred our vision. How else can we explain our pre-occupation as economists with endless refinements of statistical series concerning GNP, investment, saving, exports and imports; continuing fascination with growth models; formulation of evaluation criteria primarily in terms of output increases? If eradication of poverty was the real objective, why did so little professional work go into determining the extent of unemployment, maldistribution of incomes, malnutrition, lack of housing, or other forms of poverty? Why is it that after two decades of development we know so little about the extent of real poverty—even in such "well planned" economies as India and Pakistan?

We also went wrong in assuming that income distribution policies could be divorced from growth policies and could be added later to obtain whatever distribution we desired. Here we displayed a misguided faith in the fiscal systems of the developing countries and a fairly naive understanding of the interplay of economic and political institutions. We know now that the coverage of these fiscal systems is generally narrow and difficult to extend. We also know that once production has been so organized as to leave a fairly large number of people unemployed, it becomes almost impossible to redistribute incomes to those who are not even participating in the production stream. We are coming to realize that the very pattern and organization of production itself dictates a pattern of consumption and distribution which is politically very difficult to change.

We have a number of cases by now which show how illusory it was to hope that the fruits of growth could be redistributed without reorganizing the pattern of investment and production first. Some of the fast growing economies in Latin America illustrate this point. In my own country, Pakistan, the very institutions we created for promoting faster growth and capital accumulation later on frustrated all our attempts for better distribution and greater social justice. I am afraid the evidence is unmistakable: divorce between production and distribution policies is false and dangerous. The distribution policies must be built into the very pattern and organization of production.

Where does all this lead? It leads us to a basic re-examination of the existing theories and practice of development. It is time that we stand economic theory on its head and see if we get any better results. In a way, the current situation reminds me of the state of affairs in the developed world in the early 1930s before Keynes shook us all with his General Theory. Since existing theories did not fit the facts in the real world, they had to be discarded. Keynes provided us with a fresh way of looking at economic and political realities. His theoretical framework was not very elegant but his ideas had a powerful impact. Today the developing countries are seeking a fresh way of looking at their problems. They are disillusioned, and somewhat chastened, by the experience of the last two decades. They are not too sure what the new perspective on development should be. But at least some of the elements are becoming increasingly clear.

First, the basic problem of development should be redefined as a selective attack on the worst forms of poverty. Development goals must be defined in terms of progressive reduction and eventual elimination of malnutrition, disease, illiteracy, squalor, unemployment and inequalities. We were taught to take care of our GNP as this will take care of poverty. Let us reverse this and take care of poverty as this will take care of the GNP. In other words, let us worry about the content of GNP even more than its rate of increase.

Second, the developing countries should define minimum or threshold consumption standards that they must reach in a manageable period of time, say a decade. Consumption planning should move to the center of the stage: production planning should be geared to it. And consumption planning should not be in financial terms but in physical terms, in terms of a minimum bundle of goods and services that must be provided to the common man: minimum nutritional, educational, health and housing levels, for instance. The demand concept which weights the basic needs of different groups by their ability to pay will only distort the pattern of production and consumption in favor of the "haves;" it should be replaced by the minimum need concept. The pursuit of elusive Western standards and per capita income levels, which cannot be reached even over the next century, must be replaced by the concept of a threshold income which each society defines for itself and which can be reached in a manageable period of a decade or so.

Third, the concerns for more production and better distribution should be brought together in defining the pattern of development; both must be generated at the same time; the present divorce between them must end. If a pattern of production (and exports and imports) is geared to satisfying minimum consumption requirements and to employing the entire labor force, then higher production will itself lead to better distribution.

Fourth, and this is implicit in the third, employment should become a primary objective of planning and no longer be treated as only a secondary objective. Let us reverse the present thinking that there is only a fixed amount of capital to be allocated at a particular time and it can employ only a certain part of the labor force, leaving the rest unemployed—to subsist on others as hangers on or as beggars, without any personal income, often suffering from worst forms of malnutrition and squalor. Instead let us treat the pool of labor as the given factor at any particular time which has to be combined with the available capital, irrespective of how low the productivity of labor or capital may be. If physical capital is short, skill formation and organization can replace it in the short run. It is only if we proceed from the goal of full employment, with people doing something useful at least, even with small doses of capital and organization, that we can eradicate some of the worst forms of poverty. Then the character and pattern of production changes, since better income distribution will also mean greater production of those goods which are less import- and capital-intensive and require more labor.

These are only a few elements in the new perspective that is needed today on development. They are neither complete nor carefully integrated, nor perhaps very original. I offer them as an invitation to further thinking.

[Excerpted from a presentation at the 12th World Conference of the Society for International Development, May 17, 1971, in Ottawa, Canada. Selected proceedings of the conference, including this article, are being published by SID in the fall of 1971.]

The Potential Effect of Income Redistribution on Economic Growth in Four Latin American Countries

William R. Cline

[Current theories on income distribution and the probable results of income redistribution for development are reviewed. Greater equality of incomes is likely to reduce national savings and thus hinder economic growth, though favorable effects on import requirements and on factors of production are possible. Experiments with data from a few Latin American countries suggest: greater equality would slow growth rates somewhat, have almost no impact on imports or economies of scale, but shift demand toward more plentiful factors of production.]

This study focuses on the effect which income redistribution within a country would have on its economic growth. Both in the theoretical literature and at the level of practical planning the two goals of "economic growth" and "equity"—i.e., greater equality in incomes—are often considered to be in conflict; we will examine whether, and to what degree, economic growth must be sacrificed for alternative desired increases in equity. But first it is useful to consider the question in reverse, and ask whether there are systematic forces changing income distribution as economic growth proceeds.

On a basis of neoclassical analysis, one would expect that in the long run rising per capita income would be associated with greater equality in distribution. The payment of labor is the main source of lower incomes; as the capital stock rises relative to the labor force the marginal product of labor rises and that of capital falls (unless rescued by technological change). If the elas-

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ticity of substitution between capital and labor is less than unity, as one expects, then capital's share in national product falls and that of labor rises. This shift in factoral shares would cause equalization in the distribution of income, assuming that capital income goes to high income recipients and labor earnings to low income recipients.

Kuznets, however, has suggested two reasons why the secular trend in income distribution would be toward greater inequality. 1) To the extent that the savings ratio is higher for higher income groups, upper income recipients will accumulate income-yielding assets proportionately more rapidly than lower income recipients. 2) This applies more strictly to countries in the early stages of development: as growth occurs, labor shifts from the rural to the urban sector, but the distribution of income is more skewed in urban than rural sectors (according to Kuznets; this is not found everywhere). Under certain assumptions a shift of labor toward the urban sector implies an increase in the inequality of income distribution. Finally, Kuznets implies that growing political influence of low income groups is the main countervailing influence offsetting the other two forces with the net result of increasing equality of income distribution as the economy matures—after a phase of increasing inequality at the early stage of growth.

The advanced industrial countries seem to have experienced long-run increasing equality of income distribution as their per capita income grew. However, it is unclear whether this equalization resulted from increasec capital per worker, as implied in a neoclassical interpretation, or from other influences such as intentional social measures. In the short run the effect of economic growth on income distribution is more uncertain: shifts in income distribution depend much more on specific policy choices than on automatic forces. However, some automatic forces do exist which may cause greater inequality as development proceeds, in the short run. One such force is Myrdal's "backwash" effect: externalities of infrastructure cause capital to continue pouring into the more advanced "development poles" of a country, rather than away from them as neoclassical analysis would predict. In sum, in the long run economic growth should cause equalization in income distribution, although in the short run the reverse may occur.

The Savings Effect of Income Distribution on Growth

Profits as the source of savings. The influence of income distribution on savings is the aspect of the relation of equity to growth which has received the most attention in the literature. The argument is usually phrased in terms of functional distribution: a higher profit share (lower wage share) is supposed to cause a higher savings

rate, on the assumption that the profit recipients save a higher fraction of their income than wage recipients. Thus, in the dual economy model of W. Arthur Lewis, a rising share of saving in national income is explained by a growing weight of the economy's "modern sector," in which entrepreneurial profits comprise a larger share of value added than in the "traditional sector." The idea that entrepreneurial profit is the major source of savings is also the basis of Galenson and Leibenstein's argument that in order to maximize the reinvested funds per unit of capital invested, capital-intensive rather than labor-intensive techniques should be used.

The implication of the above arguments for personal income distribution is clear: since the number of entrepreneurs will be small relative to the number of workers, a general development strategy favoring a high profit share implies favoring a highly skewed distribution of personal income. In general, the economic development literature has emphasized the relation of the savings rate to the share of profits in the "modern sector," suggesting that the more skewed the personal income distribution, the higher will be the savings rate for national income—so long as the upper-bracket income in question comes from entrepreneurial profit.

Houthakker's empirical estimates tend to support the hypothesis that the propensity to save for entrepreneurial income exceeds that for labor income. Using eight-year averages for 28 countries, he estimated:

$$S_P = \underset{(.022)}{.043L} + \underset{(.041)}{.120P}$$

where S_P = personal saving, L = employment income plus government transfers, and P = all other personal income; all data are in per-capita terms in 1955 dollars at official exchange rates; figures in parentheses are standard errors. From this estimate Houthakker concludes: "...the marginal propensity to save out of income from employment is much lower than that for income from property and entrepreneurship." However, this conclusion is incorrect if it means that these two propensities differ even when the influence of income level of the recipient unit is removed. Houthakker's data are not observations from within each country, with many different income levels for each type of income; his data are not adequate to the task of testing whether <u>for a given household income level</u> saving is higher if the recipient is an entrepreneur than if he is an employee. The results obtained might be perfectly explained by the normal Keynesian savings-income relationship with no resort to special propensity by income type. This author therefore rejects the view that income type rather than income level (within the country) determines savings rates, in lieu of further evidence. Such data as I was able to find for Brazil did not indicate a significant difference attributable to income type.

For policy purposes, it could be misleading to conclude that property income recipients have a higher propensity to save than labor recipients. For example, if tax legislation were designed with lower rates for non-labor income (at given income levels), the result would be inequity without the desired effect on savings if savings were solely determined by income level. To avoid such a problem, income at identifical levels could be taxed at identical rates, regardless of income type, but tax credits could be granted for amounts actually saved (or invested in specific forms). Healthy propensities would then be reinforced, at worst, and created at best.

Effects of income redistribution on savings. While the literature on economic development has emphasized the relation of savings to the kind of income, the more general economics literature is abundant with controversy over the relation of the savings rate to the level of personal income. Four alternative hypotheses summarize the controversy:

a) the average propensity to save rises as income rises (Keynesian consumption function);

b) consumption is a constant fraction of "permanent income" (Friedman);

c) life cycle savings: saving is done for the purpose of retirement plus desired bequests, and the savings rate depends mainly on the individual's age (Modigliani and Brumberg);

d) the savings rate is a function of income level relative to average income in the society (Duesenberry).

It is important to consider the implications of each of these hypotheses for the effect income redistribution would have on aggregate savings. None of the hypotheses can be dismissed summarily since no conclusive empirical proof of one as opposed to the others has been established. To the extent that the hypotheses suggest income redistribution would lower aggregate personal savings, a conflict between "equity" and "economic growth" is implied.

In the Keynesian case, consumption is related to income either linearly or curvilinearly. If the relation is linear, income redistribution cannot affect aggregate personal savings. This conclusion holds whether the ex ante marginal propensity to consume of each recipient is used as the basis of calculation, or the ex post average propensity to save is used, as in this paper. If the Keynesian consumption function is curvilinear, however, then aggregate savings declines after income redistribution. If it is assumed that each household will consume an amount after redistribution equal to its previous

consumption plus its pre-redistribution (ex ante) marginal propensity to consume multiplied by its change in income, the decline in savings after redistribution will be greater. If the household consumes merely in accordance with the general consumption function as applied to its new income level (ex post average savings rate basis), the decline in savings will be smaller.

If the income redistribution were considered to be a lasting phenomenon, it is likely that the households would behave according to the "ex post average" case rather than the "ex ante marginal" case. That is, a household with a particular income level after redistribution would consume the same amount that households with that income level before redistribution had consumed. An income-losing household would not consume as much as indicated by its pre-distribution level minus its pre-redistribution marginal propensity to consume times its decrease in income. The latter level of consumption might be maintained during a short period (as hypothesized in Duesenberry's rachet effect for falls in income) but not over a long time period, during which the family would come to realize it was living beyond its means by a greater degree than other families of identical means.

In the case of Friedman's permanent income hypothesis, redistribution of income would not affect aggregate savings so long as all families believed the new incomes to be permanent. By the Friedman hypothesis, an identical fraction of the believed "permanent" income is consumed by all households, regardless of level of actual permanent income.

In the life-cycle savings case (Modigliani-Brumberg), redistribution of income would only affect aggregate savings if the "bequest" were an income-elastic consumption item. If not, then assuming length of work-life and retirement-life to be randomly distributed with respect to income level, redistribution of income would not affect aggregate savings. The savings rate would depend on age but would be invariant with respect to income level. However, with demand for bequests income-elastic, the high-income recipient would save a higher percent of his income than a low-income recipient of the same age, since the former would be saving to establish a more than proportionately higher bequest.

With Duesenberry's relative income hypothesis, if the average propensity to save depends only on the level of income relative to the national average (or median) income, then income redistribution might or might not affect aggregate savings, depending on the specific form of the relationship. There is no way to judge a priori whether the "relative income" consumption function would be of a form which would cause aggregate savings to remain constant or to fall after income redistribution.

In sum, of the four major alternative consumption function hypotheses, only the curvilinear version of the Keynesian function would unambiguously cause a decline in aggregate savings when income is redistributed from high-income to low-income recipients. The "permanent income" hypothesis implies no change in savings; the life-cycle hypothesis implies decreased savings only if bequests rise more than proportionately with income; and the relative income hypothesis (like the Keynesian hypothesis) gives decreased savings for some specifications of the function but not for a linear specification. Thus, by using the Keynesian function and permitting it to be curved, as in the empirical exercises below, this study should overstate rather than understate the negative effect of income redistribution on aggregate savings.

Adequacy of demand. Before leaving discussion of the savings effect of income redistribution, it is necessary to examine an argument that runs in exactly the opposite direction—the notion that income redistribution would stimulate long run growth because consumption would increase and buoy up investment in an otherwise stagnant economy. Certain economists, notably Celso Furtado, argue that lack of consumer demand is causing stagnation in Latin American economies. If one accepts this position, then the negative savings effect of income redistribution becomes a stimulus rather than a hindrance to growth.

Furtado's version of the under-consumption argument incorporates the specific features of Latin American industrialization through import substitution. His central hypothesis is that as import substitution moved from simpler consumer goods to more sophisticated consumer durables and capital goods, the capital/labor ratio increased, and, given a wage held constant in real terms by a pool of unemployed, increasing capital intensity meant that the value added generated in the new industries was increasingly concentrated in the hands of the owners. To Furtado, this process meant a lack of prospective consumer demand: implicitly the industrial workers themselves constituted the principal market for the producers, and since the growth of their aggregate earnings was slow, investment by the producers was discouraged. The result was stagnation of the economy in the late stages of import substitution.

This analysis ignores various considerations. First, capital intensity need not increase as production moves from consumer goods to capital goods: machine tools, for example, can be labor intensive—although the labor required is skilled labor. But suppose Furtado's assumption about secularly increasing capital intensity is correct. A second, more important qualification of the argument is that prospective demand for goods sold by the new industries is not limited to the purchasing power of the industries' own workers. Government

demand and demand from the agricultural and services sectors probably represent the bulk of demand for industrial goods, and with growing agricultural production and government activity there is no reason to expect demand from these quarters to be stagnant. If one objects that agriculture holds no prospects as a market because the masses of agricultural workers are at subsistence income and are out of the market, the answer is simply that the agricultural purchasing power is then in the hands of landlords, and the question is not one of quantitative lack of demand but of its composition. Third, the demand coming from the industrial profit recipients themselves is ignored. This demand may be in the form of more investment in the firm, investment in activities outside the firm, or in the form of increased consumption. Only in special cases will the entrepreneurs' use of profits be such that a depressing influence results: for example, the remission of profits abroad; the use of profits for consumption of imported goods; or the hoarding of profits—unlikely in an inflationary context.

In sum, lack of sufficient demand in the economy, as formulated by Furtado, seems improbable. At the heart of the under-consumption issue is the question of whether it is likely that the economy can be below full employment of plant capacity; disguised and open unemployment of labor are typical features of the less developed economy even when it produces at full plant capacity. The prevalence of government deficits and inflation make it highly unlikely that conditions permitting production below "full employment" in this sense exist. However, this assertion is in apparent contradiction with data showing excess capacity in certain industries in Latin American countries. There are considerations which would explain excess plant capacity as a phenomenon that does not indicate inadequate demand or below "full employment." First, in a period of short-run stabilization after rampant inflation, it is highly likely that production will be below capacity; this adjustment does not indicate long run stagnation. Second, a foreign exchange bottleneck can cause lack of imported intermediate materials and thus keep production below full capacity. In this case the adequacy of demand is not an issue; greater domestic demand would merely place greater pressure on imports. Third and most important, any excess capacity is most likely not generalized to the economy but is focused in individual sectors. As such, it represents a problem not of inadequate overall demand but one of balanced growth. The sectoral imbalance cannot be solved by increased general demand, which will merely cause prices to rise in the bottleneck sectors where production is at full capacity; presumably it could be solved either by investment in the lagging sectors (those producing at capacity), by export of production from the sectors with excess capacity, or by price policies which twist consumption and investment demand in favor of the sectors with excess capacity. Thus, the various arguments that savings is not a constraint but lack of consumer demand is, are unconvincing to this author.

Effects of Income Redistribution on Composition of Demand

Import effect. While redistribution of income should not affect total demand (i.e., consumption plus investment demand) in the economy, it may cause important changes in composition of demand. It will cause a shift in the shares of investment and consumption in total demand. Two other compositional shifts may be important: the shift in consumer goods demand may not be neutral with regard to imports, and second, the demand shift may not be neutral with respect to economies of scale.

Turning to the import effect: if the average propensity to import rises with income, shift of demand toward more basic consumer goods should lower the demand for imports. A reduced import bill can be important if foreign exchange is a bottleneck restraining growth. The fact that most consumer goods are produced domestically because of a past policy of import substitution does not rule out an "import effect" of the shift in demand toward basic goods. If the import content—including required capital and intermediate goods—is higher for income elastic goods (we may call them luxuries) than for income inelastic goods (basic goods), the shift in demand composition after income redistribution will lower import demand.

If income inelastic goods have greater economies of scale than luxury goods, the decrease in demand for luxury goods following income redistribution will release resources which, when applied in income-inelastic goods, will cause a more than compensating increase in production, since the scale of production for the basic consumption goods will increase and thus so will production efficiency for these goods. One could argue that even though economies of scale are important for some luxury goods such as automobiles, in the relevant range of domestic demand the efficient scales would not be reached; whereas if the same quantum of purchasing power were shifted into a mass market for basic goods, the scales of demand for these goods would be sufficient to achieve economies of scale in them.

Differential factor opportunity costs. A potentially important effect of income redistribution is that the resulting change in the composition of demand may shift demand away from goods requiring factor inputs with high opportunity costs and toward goods requiring factors with low opportunity costs. As examples: an increase in demand for foodstuffs requiring low-cost labor, and a decrease in demand for consumer durables requiring scarce capital inputs. The net result for the economy would be an increased production possibility for its same set of available resources.

In sum, there are four major effects on growth which income redistribution (equalization) may cause: a decrease in aggregate savings,

a change in the share of imports in total demand, a change in the possibilities for production at efficient scale in specific goods, and a shift in demand toward goods requiring factor inputs with lower (or higher) opportunity costs.

Statistical Experiments with Income Redistribution

Two types of hypothetical redistribution of incomes in the direction of greater equality are tested to determine their effects in four Latin American countries. Actual income distributions are first estimated for Argentina, Brazil, Mexico and Venezuela in particular years in the early 1960s, showing percentages of total income received by each 10 percent grouping of income receivers, with the top 10 percent broken down into: top 2.5 percent, next 2.5 percent, next 5 percent. In the first statistical experiment these income shares are redistributed to equal the same income shares found in England in 1965. The second experiment is made by redistributing income away from the top income brackets to the lower ones in such a way that no decile (10 percent group) of the population receives less than 5 percent of total income. The income share figures used in these two experiments are shown in Table 1, along with the "original" figures based on surveys and census data.

Table 1: Percentages of Income Received by Each Income Bracket: Original and Experimental

Percent Position Recipients	English Distribution %	Argentina 0 %	Argentina E_2 %	Brazil 0 %	Brazil E_2 %	Mexico 0 %	Mexico E_2 %	Venezuela 0 %	Venezuela E_2 %
0-10	2.4	2.9	5.0	1.4	5.0	1.7	5.0	1.5	5.0
10-20	3.7	4.1	5.0	1.6	5.0	2.0	5.0	2.3	5.0
20-30	5.0	4.8	5.0	2.3	5.0	3.4	5.0	3.2	5.0
30-40	6.8	5.5	5.5	3.3	5.0	3.4	5.0	4.4	5.0
40-50	8.3	6.1	6.1	4.1	5.0	5.2	5.2	6.8	6.8
50-60	9.8	7.0	7.0	5.1	5.1	6.1	6.1	8.6	8.6
60-70	11.9	8.0	8.0	6.2	6.2	7.8	7.8	8.6	8.6
70-80	13.6	9.6	9.6	6.5	6.5	12.4	12.4	11.4	11.4
80-90	15.4	12.9	12.9	11.6	11.6	16.4	16.4	16.4	16.4
90-95	10.1	9.7	9.7	12.2	12.2	13.1	13.1	13.0	13.0
95-97.5	5.8	9.3	9.3	22.9	16.7	9.7	9.5	8.8	7.5
97.5-100	7.2	20.1	16.9	22.9	16.7	18.8	9.5	15.1	7.5

NOTES: 0 = Original E_2 = Experiment 2

SOURCES: For England, United Nations Economic Commission for Europe, 1965 Survey; for Argentina, United Nations data on families, 1961; for Brazil, "active non-agricultural workers" in 1960 census; for Mexico, income distribution data from Banco de Mexico survey, 1963; for Venezuela, 1962 family budget survey by Venezuelan Central Office of Coordination and Planning.

The savings effect: estimates. As a basis for the calculations of income redistribution's effect on savings, statistical estimates of con-

sumption functions are made for the same four countries. The data are cross-sectional and are drawn from household budget surveys. Samples of 4,000 to 6,000 households were surveyed in each country; in Argentina and Brazil these were urban samples, and in Mexico and Venezuela both urban and rural. Family incomes, and the expenditures on various categories of goods and services, were obtained for households at different income levels. After appropriate expansion of the sample data to national dimensions, consumption functions (i.e., the percentages of income spent or saved as income varies) were then estimated for each nation, using alternative formulas. Table 2 shows the estimated percentages saved in each income group, by nation; dissaving (spending more than income) appears in the minus values.

Table 2: Original Average Savings Rates (%) by Income Distribution Bracket

Distribution Position	Quadratic basis*				Log-linear basis*			
	Arg.	Braz.	Mex.	Venez.	Arg.	Braz.	Mex.	Venez.
0-10	-14.5	-11.4	-114.1	-169.2	- 9.9	-14.8	-94.4	-73.6
10-20	- 2.4	-10.0	- 96.5	- 94.7	- 1.5	-13.5	-85.9	-54.9
20-30	2.1	- 6.6	- 51.1	- 63.0	2.1	- 9.4	-58.1	-44.3
30-40	5.5	- 4.2	- 51.1	- 35.9	5.1	- 5.7	-58.1	-32.8
40-50	7.9	- 3.1	- 30.0	- 12.5	7.3	- 3.6	-40.2	-19.7
50-60	10.8	- 1.9	- 23.5	- 2.7	10.2	- 1.4	-33.5	-12.6
60-70	13.3	- 0.9	- 15.1	- 2.7	12.9	0.5	-23.8	-12.6
70-80	16.6	- 0.6	- 3.7	5.9	16.5	0.9	- 8.3	- 5.1
80-90	21.4	2.5	1.9	13.9	21.9	6.4	0.4	3.9
90-95	27.9	8.3	10.3	20.7	28.9	12.9	13.1	14.3
95-97.5	40.3	34.8	17.5	23.4	38.7	23.3	22.5	19.7
97.5-100	57.8	34.8	33.7	27.3	47.4	23.3	36.3	30.4

*Two types of consumption function were used. The quadratic form was: $C = a + bY + cY^2$, where C = consumption, Y = income. The log-linear form was: log C = a + b(log Y). Both showed high levels of correlation (R^2), higher than those using the linear formula (C = a + bY) except for Venezuela.

The implied savings rates for each nation as a whole were then calculated. Having done this for the actual (original) income distributions, the consumption functions were then applied to the hypothetical redistributions (as in Table 1) to determine how the national savings rates would be affected. Next the impact on annual growth in gross national product (GNP) was estimated, assuming savings equal to investment and using a value of 3.0 for the ratio of increments in investment to increments in GNP (ICOR). Table 3 shows the changes in total national savings and growth rates resulting from income redistributions. [NOTE: Description of problems relating to the data and the statistical methods used to obtain consumption functions, and many comments on the reliability of the results, are omitted from this excerpt; interested readers should consult the original document.]

The large negative savings rates at low income levels in Mexico and Venezuela shown in Table 2 are very questionable. Nevertheless,

Table 3: Aggregate Average Savings Rates for Disposable Personal Income and Changes in Annual Growth Rates for GNP. Simulated

		Original	English Distribution (Experiment 1)		Experiment 2 Distribution	
		Savings Rates	Savings Rates	Change in GNP Growth	Savings Rates	Change in GNP Growth
Argentina	Q	24.6%	19.2%	-1.26%	23.1%	- .35%
	LL	22.6	19.8	- .65	21.5	- .25
Brazil	Q	16.3	3.1	-3.40	9.2	-1.65
	LL	12.0	6.5	-1.28	9.0	- .70
Mexico	Q	-2.3	-7.3	-1.17	-6.0	- .86
	LL	-3.5	-11.1	-1.77	-9.3	-1.35
(Navarrete data)	LL	14.7	10.6	- .96	11.7	- .72
Venezuela	L*	2.1	2.1	0	2.1	0
	LL	-.5	-5.1	-1.07	-4.8	-1.00

NOTES: Q = quadratic consumption function basis.
LL = log-linear consumption function basis.
* = for Venezuela linear consumption function used in place of quadratic (quadratic term not significant).

the simulated savings change could be correct, even with an incorrect set of original absolute savings rates, if the true consumption function were exactly parallel to the observed function (i.e., the observed minus a constant value); the change in savings after income redistribution would then be accurately measured even though the observed consumption function overstates consumption everywhere. For the Mexican case there is a check on these results available from estimates based on a less comprehensive study by Navarrete. The savings simulation calculation applied to the Navarrete data yields much more plausible savings rates: these range from an average savings rate of -22 percent in the bottom bracket to 34 percent in the top bracket (using the log-linear basis). The "original" aggregate savings rate is 14.7 percent in the Navarrete data (see Table 3) and the aggregate savings rate after change to the English distribution is 10.6 percent; after change to the Experiment 2 distribution it is 11.7 percent. Thus the alternative data set implies smaller decline in savings after income redistribution.

It should be remembered that the calculations for Argentina and Brazil refer to urban data only, both for income distribution and consumption functions. It is impossible to say a priori why inclusion of the rural sector for Mexico and Venezuela would make the negative savings larger. Rather, one might expect the savings rate for a given

income level to be higher in the rural sector, given the outlet for investments in the farm and given the more obvious consumption pressures in the cities. However, the overall lower income level in the rural sector might offset a higher savings rate at specified income for purposes of the overall savings effect calculation.

Redistribution of incomes in the direction of equality entails some sacrifice in GNP growth rates when either quadratic or log-linear consumption functions are used. As an example of the results shown in Table 3, suppose the economy is growing at 4 percent annually in Argentina. Redistribution of income to the level of equality found in England will then reduce the total growth rate by 1.26 percent to a rate of 2.74 percent—assuming the quadratic function is the basis for calculation. The most serious damage to the growth rate is in the quadratic case for Brazil, in a shift to English equality. Detailed investigation of the consumption function data and estimates, however, strongly suggests that the quadratic function overstates savings in the upper income bracket; the quadratic case for Brazil may therefore be ignored. The sacrifice of growth due to income equalization is relatively small for Argentina, and is nil for Venezuela (assuming the linear function). For Mexico the loss is relatively high for the English experiment—1.77 percent is lost (log-linear basis)—but the Navarrete data for the same experiment show only a .96 percent loss. In light of the discussion above of these two data sources for Mexico, the latter should be considered more accurate. Thus, a redistribution of income towards the level of equality found in England would cause decreases in growth rates on the order of 1 percent in Brazil and Mexico, and smaller decreases in Argentina and Venezuela.

Effects on the Composition of Demand

Import effects. Brazil and Mexico are the only two countries of this study for which detailed data are available to permit estimation of the demand composition effects of income redistribution. Two types of data are required to determine the effect on imports: consumption functions by product (to obtain income elasticities of demand), and input-output data. (Detailed consumption data were available for Argentina, but the most recent input-output data available were for 1953.) To calculate the effect of income redistribution on imports, it is first necessary to calculate the changes in the final demand which would result for each product sector; then input-output analysis may be used to determine the resulting change in imported components corresponding to the new final demands.

The results of import simulation after redistribution are surprising: imports decline, but by negligible amounts. For Mexico, imports after a move to the English income distribution are only 0.8 percent or 2 percent less than original imports [NOTE: two alternative cal-

culations were tried for Mexico]. In the income redistribution of "experiment 2," imports decline by 0.5 percent or 1.5 percent. For the Brazilian case, the calculations yield only a 1.7 percent decrease in imports if a shift to English equity occurs, and a 0.8 percent decrease in imports if a shift to equity of "experiment 2" occurs. In sum, careful calculation of direct and indirect import changes after income equalization suggests that the resulting decreases in imports would be very minor—on the order of one percent. Thus, income redistribution could not be expected to help growth substantially through reduction of the import bill.

Economies of scale resulting from demand shifts. Of the sectors in the Brazilian input-output table, the following are the most likely to have economies of large scale production: electricity, metallurgy, machine tools, electrical materials, transportation materials, rubber, plastics. In the other sectors returns to scale seem less likely; for agriculture and textiles in particular, returns to scale are probably constant. The final private consumption demand for the sectors listed above declines (except for electricity) after income redistribution. The percentage decline for rubber and transportation materials is particularly large (about 75 percent in the English distribution case); however, the weight of these sectors in the overall total of final demand is not large. More important is the sector "electric materials," which does not suffer as large a decline in demand after income redistribution. For the Brazilian case, then, it appears that there would be no gain from increased demand in sectors with returns to scale, after income redistribution; instead there might be some loss, since the sectors most likely to have economies of scale would experience some decline in demand.

In the Mexican input-output sector list, the sectors most likely to have economies of large scale production are the following: petroleum, paper, rubber, chemicals, plastics, fertilizer, pharmaceuticals, basic metals, metals, machinery, electrical machinery, transport equipment, automobiles, and electricity. Of these sectors, substantial declines in desired gross output would occur in only a few: automobiles (17 percent decline in one estimate), and transportation materials (13 percent decline) are the main cases. On the contrary, gross output required would increase in some of the others of these sectors with increasing returns to scale: petroleum, plastics, fertilizers, pharmaceuticals and electrical machinery would experience small percentage increases.

To summarize, while the Brazilian data suggest possible loss after income redistribution due to declining demand for sectors with returns to scale, the Mexican data (with analysis on the more relevant gross-output basis instead of a final demand basis) suggest little such loss. Furthermore, it must be remembered that any excess capacity in large-scale sectors caused by income redistribution could perhaps be

used for export of surpluses; moreover, the general level of the economy would presumably grow to the point where the capacity would once again be fully utilized at the large scale.

Factor opportunity cost. One major aspect emerges strongly in the effects of changes in demand composition on factor costs. The main sectors to benefit from demand change after income redistribution would be agriculture, food products generally, and to some extent textiles. These two general sectors tend to be labor intensive. The land input is available at little cost (presumably less cost in Brazil than in Mexico). In contrast, some of the sectors for which demand would decrease are presumably capital intensive: automobiles, transport material, rubber, electrical materials. An exception is construction (for which demand would decrease, in the Brazilian case); the sector is labor intensive. On balance, the very large weight of agriculture and foodstuffs in the increased demand suggests that income redistribution would raise overall economic efficiency by shifting demand to a sector with low factor opportunity cost (land and labor) and away from sectors with high factor opportunity cost (capital). However, it is beyond the scope of this study to present a rigorous analysis of the question.

Policy Implications of Findings

Our simulation exercises have suggested that for Brazil and Mexico income redistributions toward equality of the level found in Britain would cost on the order of one percent annual growth in GNP with the sacrifice of growth slightly less in Argentina and Venezuela. Since these calculations assumed the curvilinear Keynesian consumption function, they represent a maximum statement of the growth loss: alternative theories would suggest no change in savings despite income redistribution. Nevertheless, the existence of some kind of trade-off between production and equity does appear probable. But even assuming the calculations in this study to be realistic, one might conclude that the sacrifice of one percent in growth rates would be worth the improved equity, especially in countries where unequal distribution is a basic source of political instability.

Contrary to what one might expect a priori, the import effect of income redistribution appears to be negligible. Calculations for Brazil and Mexico show that demand composition changes after redistribution would cause very slight declines in the import bill, either in direct import effects or in indirect effects calculated through use of the input-output table. Similarly, demand composition changes appear to have little effect on opportunities for exploitation of economies of scale. However, the large shift of demand toward foodstuffs after income redistribution suggests that gains in economic efficiency could be obtained due to the low opportunity cost of factors essential in agriculture—land and labor.

The major policy implication of this study is that even under conservative assumptions income redistribution would not do irreparable damage to economic growth, and the growth costs could be regarded as very reasonable in comparison with the resulting equity gains. However, the opposite view that redistribution would be a great stimulus to growth seems to have little theoretical or empirical basis. The arguments concerning "market size" or "import effects" appear incorrect (for the former) or of little empirical significance (for the latter). The main possible growth stimulus from redistribution appears to be the possible utilization of low-cost factors for agricultural production to meet new demand for foodstuffs.

The policy measures by which income redistribution may be achieved are varied. Reliance on heavily progressive income taxes is likely to be ineffectual, due to collection difficulties, while a negative income tax is impractical. A high minimum wage would not help the lowest strata and could reduce employment. In some cases land reform, or increased expenditures on education and health, may be effective. The most promising general method of redistribution seems to be any set of policies (e.g., taxation or government investment) stimulating production in labor-using sectors and techniques within sectors. The resulting increase in employment opportunities appears to be economically efficient and would channel a larger share of national income to the working class.

[Excerpted from The Potential Effect of Income Redistribution on Economic Growth in Six Latin American Countries. A report prepared for the U.S. Agency for International Development, August 1970. A revised version of this study is to be published by Praeger Publishers, Inc., New York.]

An Anatomy of Income Distribution Patterns in Developing Nations

Irma Adelman and Cynthia Taft Morris

[Statistical analysis of income distributions in 44 developing countries shows that important factors associated with inequalities in income are the existence of relatively rich mineral or land resources and the intensive exploitation of them that leads to a "dualistic" society. Factors associated with greater equality are wider educational opportunities and government ownership. Greater income equality tends to appear in the most developed and in the very least developed countries.]

The distribution of income among the individuals and households of a nation is central to its economic welfare. An understanding of the interactions between the inequalities of income distribution and various aspects of economic and social modernization is therefore essential for the formulation of appropriate development policy. This study is an empirical investigation into the sources of intercountry variation in various facets of income distribution in 44 underdeveloped nations, which span the range from predominantly subsistence economies to those rapidly approaching a developed state; Japan is also included.

Most of the theoretical discussion on income distribution refers to the manner in which functional shares are determined, i.e., shares accruing to the factors of production—land, labor, capital, and entrepreneurship. The establishment of functional shares, and the quantities of these factors possessed by individuals, then ipso facto determine the distribution of personal

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incomes. But many qualifications must be introduced in the application of such a theory, especially in developing countries. Differences in individual wages are often the result of non-market considerations—norms set by the previous colonial power or a politically powerful traditional elite, and influenced by semiarbitrary scales for government employees, the social philosophy of the government, minimum wage laws, the degree of unionization, and the role of expatriates. The extent of concentration of income in underdeveloped nations should therefore depend not only on various aspects of the structure of the economy, its factor endowments, institutions, and linkages with the rest of the world, but also on the political complexion of the government, the country's colonial heritage, the structure of political power and pressure mechanisms, and the recentness of independence. Various indices of economic, political and social forces which could on a priori grounds be expected to exert an impact upon the distribution of income were therefore introduced into the analysis as independent variables.

The Dependent Variables

Data on income distribution are notoriously unreliable, even in developed countries. The raw data are usually derived from information supplied by the income recipients themselves; its accuracy is therefore a function of the recall of the respondent, of his perception of the use to which the information will be put, of his veracity about a sensitive subject, etc. Three types of sources were used to construct the income distribution tables in this study: budget or income-expenditure studies which sample different strata of the population; income information compiled from national censuses; and tax returns. This last source may be somewhat more reliable, but was available in very few countries. In some cases, the results of budget studies referring to particular segments of the population (e.g., only urban, or only wage earners) were used in conjunction with data from the national accounts statistics and from other sources to construct the overall picture of income distribution. In some cases, the basic information was exceedingly coarse; a finer breakdown into class intervals was achieved by fitting the distributions to similar empirical or theoretical distributions. Whenever the lowest end of the lowest income class was not given, the minimum income was estimated by fitting a Pareto curve to the data. Whenever the average income in the upper class interval was not given, it was estimated by selecting a value which would equate the average per capita (or per household) income estimated from the income distribution to the corresponding value estimated from the national accounts.

There were other sources of incompatibility in the basic data. Some of the information for example referred to households, some to individuals, and some to active population. Information on households was preferred because of theoretical considerations. It should be

noted however that for a given country the distribution based on active population indicates less concentration than the distribution based on households; the latter, in turn, shows less concentration than data for individuals. Since the percentage adjustment differs with the nature of the distribution, no adjustment on this score was attempted. Also, our data refer to various years in the late fifties and through the sixties; income distributions do not change very rapidly, however. What is more serious is that the extent of detail differs substantially among countries, varying from 28 class intervals for Zambia to 5 class intervals for some African and Latin American nations; the more detail provided, the greater is the estimate of concentration.

The basic data for the study are summarized in Table 1. [For the list of sources for the data, together with the estimates of country income distributions used to obtain figures in this table, readers should consult the original document.] Six different dependent variables were constructed from the data:

1. The income share of the poorest 20 percent of the population.
2. The proportion of the total product accruing to the lowest 60 percent of the population.
3. The ratio of income of the middle 40-60 percent quintile (i.e., the households 10 percent below and 10 percent above the median income households).
4. The share of total output accruing to the wealthiest 5 percent of the population.
5. The percentage of national income accruing to the upper 20 percent of the population.
6. The concentration (GINI) coefficient. This index is a measure of the extent of departure of the actual income distribution from a uniform income distribution, and represents the best single index of overall concentration. However, income distributions with very different properties can have the same concentration ratio. [NOTE: Since results of analysis with the GINI coefficient added little to those using measures (1) to (5), such results are not described in this excerpt.]

The Independent Variables

A wide range of independent variables, chosen as having some possible relationship with the aspects of income distribution described above, were tested in the analysis. They include 18 economic indicators, five socio-cultural indicators, and eight political indicators. For the most part, indicators refer to conditions in the early 1960s. Of this array of 31 variables, the following 12 (not listed in order of importance) proved to be the most significant in explaining one or more of the breakdowns in income distribution:

Table 1: Income Distribution Estimates

Percentage Shares in Total National Income Going to Population Groups of Different Income Levels in 44 Countries

	Poorest 20%	Poorest 60%	Middle 40-60%	Highest 20%	Highest 5%
Argentina	7.00	30.40	13.10	52.00	29.40
Bolivia	4.00	26.60	8.90	59.10	35.70
Brazil	3.50	22.70	10.20	61.50	38.40
Burma	10.00	36.00	13.00	48.50	28.21
Ceylon	4.45	27.47	13.81	52.31	18.38
Chad	12.00	35.00	12.00	43.00	23.00
Chile	5.40	27.00	12.00	52.30	22.60
Colombia	2.21	15.88	8.97	68.06	40.36
Costa Rica	6.00	25.40	12.10	60.00	35.00
Dahomey	8.00	30.00	12.00	50.00	32.00
Ecuador	6.30	42.60	26.10	41.80	21.50
El Salvador	5.50	23.60	11.30	61.40	33.00
Gabon	2.00	15.00	7.00	71.00	47.00
Greece	9.00	34.10	12.30	49.50	23.00
India	8.00	36.00	16.00	42.00	8.00
Iraq	2.00	16.00	8.00	68.00	34.00
Israel	6.80	38.80	18.60	39.40	11.20
Ivory Coast	8.00	30.00	12.00	55.00	29.00
Jamaica	2.20	19.00	10.80	61.50	31.20
Japan	4.70	31.10	15.80	46.00	14.80
Kenya	7.00	21.00	7.00	64.00	22.20
Lebanon	3.00	23.00	15.80	61.00	34.00
Libya	0.11	1.78	1.28	89.50	46.40
Malagasy	7.00	23.00	9.00	59.00	37.00
Mexico	3.66	21.75	11.25	58.04	28.52
Morocco	7.10	22.20	7.70	65.40	20.60
Niger	12.00	35.00	12.00	42.00	23.00
Nigeria	7.00	23.00	9.00	60.90	38.38
Pakistan	6.50	33.00	15.50	45.00	20.00
Panama	4.90	28.10	13.80	56.70	34.50
Peru	4.04	17.10	8.30	67.60	48.30
Philippines	4.30	24.70	12.00	55.80	27.50
Rhodesia	4.00	20.00	8.00	65.00	60.00
Senegal	3.00	20.00	10.00	64.00	36.00
Sierra Leone	3.80	19.20	9.10	64.10	33.80
South Africa	1.94	16.27	10.16	57.36	39.38
Sudan	5.60	29.30	14.30	48.10	17.10
Surinam	10.70	37.00	14.74	42.40	15.40
Taiwan	4.50	29.00	14.80	52.00	24.10
Tanzania	9.75	29.25	9.85	61.00	42.90
Trinidad & Tobago	3.60	18.52	9.16	57.00	26.60
Tunisia	4.97	20.57	9.95	65.00	22.44
Venezuela	4.40	30.00	16.60	47.10	23.20
Zambia	6.27	26.95	11.10	57.10	37.50
Averages	5.6	26	12	56	30

1. Per capita GNP (1961) in 1961 dollars.

2. Abundance of natural resources. This grouping of countries was based upon information regarding the quantity and variety of fuel and other mineral resources, together with data on the amount of agricultural land available per capita.

3. Extent of dualism (about 1960). This index stratifies countries by the presence and extent of socio-economic and technical dualism. At one pole are the largely agrarian societies having subsistence farming with extremely small exchange sectors. At the other pole are countries with concentrated development of a limited modern sector (especially in petroleum), often by foreign capital, contrasting with backward, traditional agriculture. Intermediate are societies where a widely developed modern sector is superimposed upon a predominantly agrarian society, and countries in which the growth of an indigenous small-farm cash-crop sector using modern techniques has evolved at the expense of a traditional subsistence sector.

4. Level of modernization of techniques of agriculture (about 1961). This indicator is a composite based upon the extent of use of mechanical power, fertilizer, and other modern techniques in agriculture, and the relative weight of traditional and of modern agriculture.

5. Character of agricultural organization (about 1960). This index combines indices of land tenure patterns and the size and viability of farming units. Various types of agrarian structure are viewed as located along a scale, one end of which is represented by communally owned agricultural lands on which the marketing of crops is only of incidental importance, and the other end of which is depicted by commercial agriculture in which owner operated farms are sufficiently large to be economically viable. Intermediate on the scale are tenant-operated subsistence farms and large owner-absentee commercial farms or plantations.

6. Rate of improvement in human resources (1961). This indicator is a weighted average of secondary and higher level school enrollment ratios as a percentage of the relevant age group. We call this index the rate of improvement in human resources since it measures the rate of additions to the stock of education rather than the total stock of education.

7. Potential for economic development. Seventy-four underdeveloped countries are grouped into three categories according to their performance during the period 1950/51 to 1963/64 in raising rates of growth of per capita GNP and improvements in seven areas of economic institutions and activities [described in an earlier work by the same authors].

8. Importance of the indigenous middle class (about 1960). This classification is based upon the relative size and political importance of indigenous people in middle class occupations in less developed countries, including entrepreneurs, and managerial, technical, administrative, commercial and banking employees.

9. Extent of social mobility (about 1960). This classification is based upon a composite measure of several aspects of social mobility, including the extent of racial or cultural barriers to mobility, the extent of educational opportunity, and access to membership in the middle class.

10. Degree of cultural and ethnic homogeneity (about 1960). Countries are ranked into groups differentiated by the proportion of the population which speaks the dominant language; distinctions within categories are based upon the extent of ethnic and religious heterogeneity.

11. Extent of political participation (1957-1962). This variable is an aggregate of three elements: the extent to which the major socio-economic and cultural-ethnic groups have their interests represented in national political decisions; the extent of choice among political channels for national representation; and the extent of actual participation in national political processes.

12. Extent of direct government economic activity (about 1960). This classification is based upon the share of government investment in total net investment.

In addition, the following variables were found to have significant relationships with one or more aspects of income distribution, but in each case less significant than one of the 12 variables just enumerated. They were: degree of improvement in agriculture since 1950; level of modernization in industry; increase in industrialization since 1950; structure of foreign trade (primary vs. processed exports); effectiveness of financial institutions; level of socio-economic development (index with 24 components); percentage of literacy; political strength of the traditional elite; strength of the labor movement; political strength of the military; and the degree of commitment of the leadership to promoting economic development.

Finally, of the 31 variables chosen as having on a priori grounds some possible relevance to income distribution, the following were found not to yield significant relationships in this analysis: proportion of the population in traditional subsistence agriculture; size and pattern of development (population size combined with industrial orientation); adequacy of physical overhead capital; effectiveness of the tax system; population numbers; urbanization (percentage of population in centers over 20,000); colonial experience (whether British, French, or other); and number of years of self-government.

Statistical Method

The technique of analysis used here is suited to the study of systematic interactions among a dependent variable, on the one hand, and a set of independent variables on the other, when there is reason to believe that the phenomenon to be analyzed affects different parts of the data differently, but when the best principles for stratifying the original data into subsamples are not known a priori. In this case the variables, interactions, and coefficients which best "explain" the variations in the dependent variable, i.e., one of the aspects of income distribution, can be quite different for high values of the dependent variable from those which are required to account for the same difference at low or intermediate values of the dependent variable. (For example, where a country's population is 65 percent agricultural, industrialization may shift the distribution of incomes against the lower 60 percent of the population and in favor of the upper 20 percent; but in more industrialized countries, further growth of manufacturing may well shift income distribution in favor of the middle 40-60 percent of the population.) Furthermore, unlike regression analysis, the independent variables need not be assumed to be uncorrelated with one another; the method used here can accommodate interactions among independent variables.

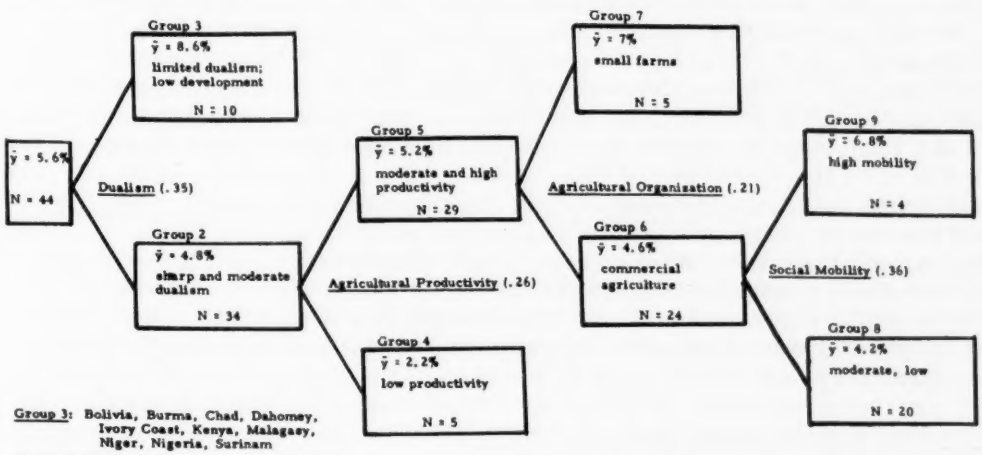
The technique is an analysis of variance employing an asymetrical branching process to divide the original sample into a series of subgroups constructed to facilitate prediction of the dependent variable with the least error. The initial sample (44 countries arrayed according to income distribution—e.g., the share of the lowest 20 percent) is tested against each of the independent variables (e.g., per capita GNP) with the latter divided in two mutually exclusive groups (e.g., countries with GNP above X, and countries with GNP below X). Mean values for the dependent variable in both groups (i.e., average shares of the lowest 20 percent of population in the high per capita GNP countries, and a similar average for the low GNP countries) and the variances of these means from the overall mean of the group are compared for each split (i.e., for each possible X value of per capita GNP used to split the group in two). For every independent variable, that partition is selected which explains the largest fraction of total variance in the dependent variable (i.e., maximizes the sum of the squared deviations of the group means from the overall mean). That variable is chosen for which the best split accounts for the greatest portion of overall variance in the dependent variable. After the initial split, the two groups of countries are then further subdivided, using the same method. This subdividion is continued, using the best variable for splitting of groups in each case, until subgroups of 10 or less are reached—or until a subgroup of more than 10 cannot be split by using any variable to produce a statistically significant result (at least 10 percent of the variance by an F test).

In the charts below, showing the results of this analysis for the five measures of income distribution, the splitting of groups and subgroups is presented in pictorial form. The box on the left shows the original group of 44 countries and its average value for the dependent variable (on Figure 1: N = 44, and $\bar{y}$ = 5.6 percent which is the average of the shares in income of the poorest 20 percent of the population in each country). Lines branch out to the right to two boxes, in which the same N (number of countries) and $\bar{y}$ (average share of the poorest 20 percent) values for each group of countries appear, along with a statement of characteristics that differentiate the two groups. Next to the point where the two lines move apart is the name of the variable used to make the split, and the proportion of variance accounted for by the split (on Figure 1: the first variable used is "Dualism," accounting for 35 percent of the variance). As these groups of countries are further split into subgroups, more lines and boxes appear with the same notations, moving to the right on the chart. In the upper left corner, the percentage of variance accounted for by the entire analysis (coefficient of multiple determination, R^2 adjusted for degrees of freedom) is shown. Names of countries are given for the box that represents the smallest subgroup in which they appear.

The Share of Income Accruing to the Lowest 20 Percent of the Population

We will now discuss the forces affecting the distribution of income at the lowest end of the income scale. The average share of GNP accruing to the poorest 20 percent in the countries in our sample is 5.6

Figure 1: The Share of Income of the Poorest 20% of the Population



Group 3: Bolivia, Burma, Chad, Dahomey, Ivory Coast, Kenya, Malagasy, Niger, Nigeria, Surinam

Group 4: Gabon, Iraq, Libya, Senegal, Sierra Leone

Group 7: Ecuador, India, Morocco, Pakistan, Tanzania

Group 9: Argentina, Greece, Israel, Japan

Group 8: Brazil, Ceylon, Chile, Colombia, Costa Rica, El Salvador, Jamaica, Lebanon, Mexico, Panama, Peru, Philippines, Rhodesia, South Africa, Sudan, Taiwan, Trinidad, Tunisia, Venezuela, Zambia

percent, or about one fourth of what it would receive had income been distributed completely uniformly throughout the population.

The important characteristics which distinguish among countries with respect to the share of income accruing to the poorest 20 percent of households are the extent of dualism and various aspects of foreign trade and agricultural policy. The relationship between the share of income in the lowest 20 percent and economic development varies with the level of development. Economic development is associated with increases in the share of the bottom 20 percent only after relatively high levels of socio-economic development have been attained. At the early stages of the development process, economic development works to the relative disadvantage of the lowest income groups.

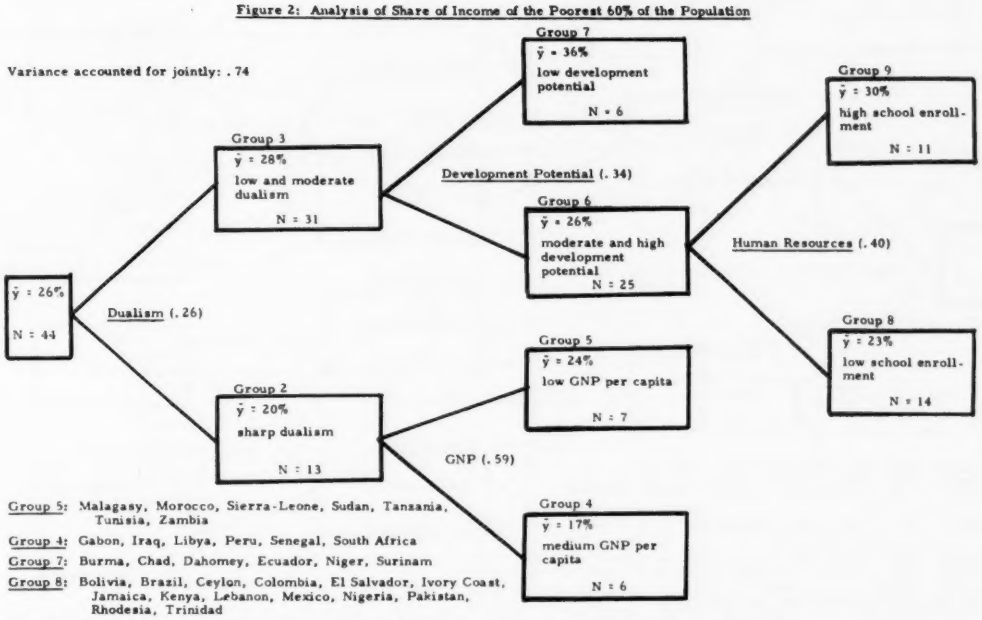
The countries of group 3, in which the highest share of national income appears (8.6 percent), are characterized by low or moderate degrees of dualism, by the pursuit of agriculturally oriented foreign trade policies, and (except for Kenya) by agriculturally oriented development patterns. They are also relatively low in the extent of their socio-economic development and in the extent of their development potential. The countries of group 4, in which the very smallest portion of national income (2 percent) accrues to the lowest 20 percent, are likewise rather underdeveloped. However, they are characterized by sharp dualism, and have economies centered on the foreign-financed and foreign managed exploitation of natural resources.

Between these extremes there are two types of countries in which a relatively large share of national income (around 7 percent) is channeled to the lowest 20 percent of their respective populations: 1) countries with small owner-operated farms devoted mostly to subsistence agriculture and of only moderate agricultural productivity (Group 7); and 2) the best developed countries (Group 9) which have high social mobility; they are ethnically and culturally homogeneous and have highly productive, modern, commercial agricultural sectors. In the majority of countries some 4-5 percent of national income goes to the lowest 20 percent of households. These countries have at least moderate (but not extremely high) development potential. They are for the most part not sharply dualistic; exceptions are Peru, Zambia, Sudan and Tunisia. Most have at least 10 percent of their indigenous active male population in middle class occupations; they have no more than 50 percent of their populations in subsistence agriculture, at least moderate agricultural productivities, and important commercial farming.

The Share of Income Accruing to the Lowest 60 Percent of the Population

The allocation of income to the poorest 60 percent of the population is related to both the extent of dualism and the level of modernization.

Figure 2: Analysis of Share of Income of the Poorest 60% of the Population



Group 5: Malagasy, Morocco, Sierra-Leone, Sudan, Tanzania, Tunisia, Zambia

Group 4: Gabon, Iraq, Libya, Peru, Senegal, South Africa

Group 7: Burma, Chad, Dahomey, Ecuador, Niger, Surinam

Group 8: Bolivia, Brazil, Ceylon, Colombia, El Salvador, Ivory Coast, Jamaica, Kenya, Lebanon, Mexico, Nigeria, Pakistan, Rhodesia, Trinidad

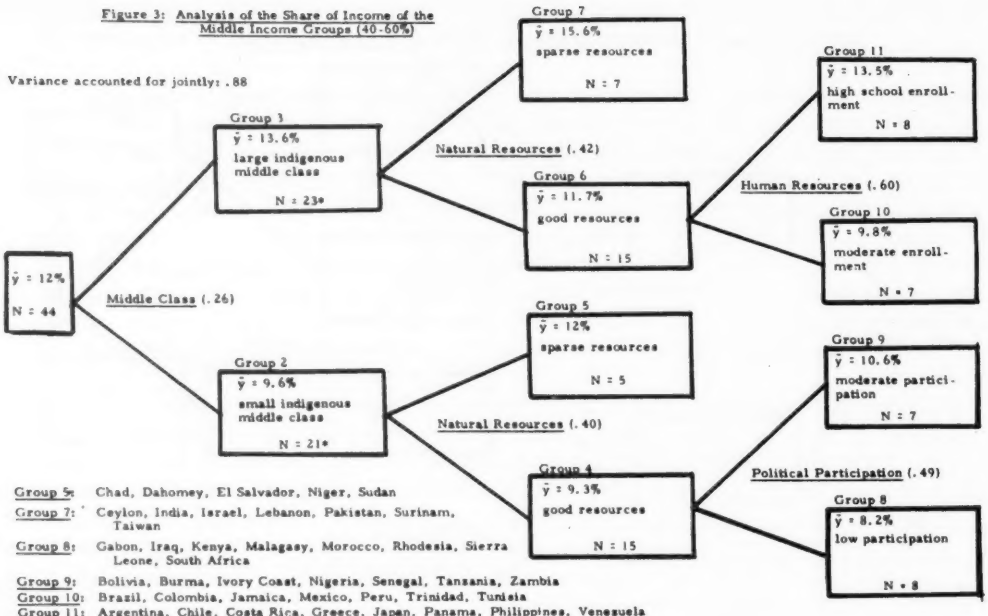
Group 9: Argentina, Chile, Costa Rica, Greece, India, Israel, Japan, Panama, Philippines, Taiwan, Venezuela

The share of the national product accruing to the poorer 60 percent of households is high under two distinctly different sets of circumstances: reasonably pervasive underdevelopment (Group 7) and very substantial development (Group 9). Under both of these circumstances, the share of the lowest 60 percent is, on the average, between 30 and 40 percent. The bottom 60 percent of households gets the smallest share (20 percent) when a sharply dualistic development process has just been initiated. In all other instances, the share of national income of the lowest 60 percent is, on the average, about 25 percent. This is the case in moderately dualistic, moderately developed countries, as well as in sharply dualistic more poorly developed countries.

The Share of Income of the Middle Income Groups

Social and economic development are uniformly to the advantage of the middle income groups. They appropriate the highest share of GNP in countries which are well developed, both economically (Group 7, with 16 percent of national income going to the middle quintile), and socially (Group 11, with 13.5 percent of national income accruing to the middle income groups). Given the level of socio-economic development, natural resource abundance is associated with a lower share for the middle income groups and a higher share to the top income groups. Greater political participation is correlated with higher shares for the middle-income households, even when the indigenous middle class accounts for less than 10 percent of active males.

Figure 3: Analysis of the Share of Income of the Middle Income Groups (40-60%)



Group 5: Chad, Dahomey, El Salvador, Niger, Sudan
Group 7: Ceylon, India, Israel, Lebanon, Pakistan, Surinam, Taiwan
Group 8: Gabon, Iraq, Kenya, Malagasy, Morocco, Rhodesia, Sierra Leone, South Africa
Group 9: Bolivia, Burma, Ivory Coast, Nigeria, Senegal, Tanzania, Zambia
Group 10: Brazil, Colombia, Jamaica, Mexico, Peru, Trinidad, Tunisia
Group 11: Argentina, Chile, Costa Rica, Greece, Japan, Panama, Philippines, Venezuela
*Ecuador and Libya omitted after first split.

The Share of Income Accruing to the Upper 5 Percent

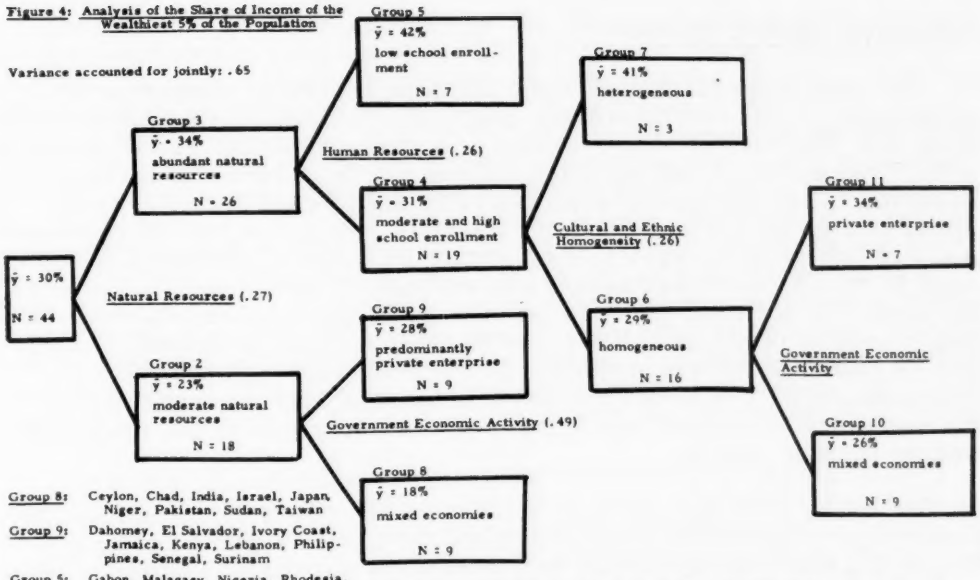
Two variables emerge as important in distinguishing reliably among countries with respect to the income share accruing to the upper 5 percent of families: abundance of natural resources, and the role of government in economic activity. The share of income accruing to the top 5 percent is larger in resource-rich countries and in countries in which private enterprise predominates. Except for Group 5, the natural-resource-rich, human-resource-poor group in which the share of national product accruing to the top 5 percent is the highest, all the final groups combine wide variations in levels of social and economic development. The countries in Group 7 have racial problems related to ethnic majorities of very poor people.

The Share of Income Accruing to the Upper 20 Percent of the Population

The factors which explain intercountry differences in the share of the upper 20 percent are quite similar to those which account for the share of the upper 5 percent: the extent of socio-economic dualism, the share of nationalized enterprise, the abundance of natural resources, and policies with respect to human resource development.

The countries in which over 60 percent of income accrues to the top 20 percent fall into one of two categories. They are either sharply dualistic (Group 3), or have neither strongly socialist governments nor generalized access to education (Group 9). The countries

Figure 4: Analysis of the Share of Income of the Wealthiest 5% of the Population



Group 8: Ceylon, Chad, India, Israel, Japan, Niger, Pakistan, Sudan, Taiwan

Group 9: Dahomey, El Salvador, Ivory Coast, Jamaica, Kenya, Lebanon, Philippines, Senegal, Surinam

Group 5: Gabon, Malagasy, Nigeria, Rhodesia, Sierra Leone, Tanzania, Zambia

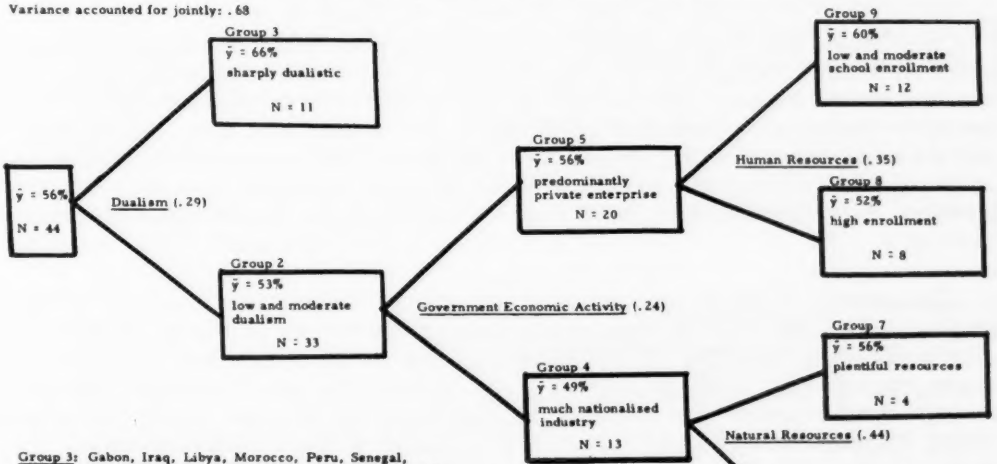
Group 7: Bolivia, Peru, South Africa

Group 10: Argentina, Burma, Chile, Costa Rica, Ecuador, Mexico, Morocco, Tunisia, Venezuela

Group 11: Brazil, Colombia, Greece, Iraq, Libya, Panama, Trinidad

at the other extreme, with 50 percent or less of the total product in the hands of the wealthy, have "socialist" governments and not too abundant natural resources (Group 6). In the other intermediate groups of countries, the share of the upper 20 percent is approximately 55 percent. There is less variance among groups in the average share of income accruing to the wealthiest 20 percent than in the shares of the top 5 percent.

Figure 5: Analysis of the Share of Income of the Wealthiest 20% of the Population



Group 3: Gabon, Iraq, Libya, Morocco, Peru, Senegal, Sierra Leone, Sudan, Tanzania, Tunisia, Zambia

Group 6: Burma, Ceylon, Chad, Ecuador, Israel, Japan, Niger, Pakistan, Taiwan

Group 7: Argentina, Bolivia, Rhodesia, Venezuela

Group 9: Brazil, Colombia, Dahomey, El Salvador, Ivory Coast, Jamaica, Kenya, Lebanon, Malagasy, Mexico, Nigeria, Trinidad

Group 8: Chile, Costa Rica, Greece, India, Panama, Philippines, South Africa, Surinam

Summary and Conclusion

The most important variables affecting income distribution are ecological, socio-economic and political. Among socio-economic indicators, the rate of improvement of human resources is the variable most frequently associated with differences in patterns of income distribution. This variable is statistically significant in 10 of the 28 splits and is the primary differentiator in five. The rate of improvement of human resources is essentially an index of the equality of access to middle level and university education, and therefore reflects the extent of political commitment to equalizing economic and social opportunities throughout the society: when access is limited, education is solely an elitist activity. In the analysis, higher school enrollment ratios are uniformly associated with less concentration in income distribution and with larger shares accruing to the lower and middle income strata.

The variable to appear next most frequently in the analysis is the abundance of natural resources. This indicator is statistically significant in a third of the splits, and it appears as primary differentiator in 5 of 28. At all levels of social and economic development, wealth in natural resources is associated with a shift in the allocation of income towards the wealthiest 20 percent and 5 percent and against the middle income groups, thereby increasing the concentration of income and wealth. Among the least developed countries, most of which are in subSaharan Africa, there is, of course, an association between the extent of dualism and the abundance of natural resources; this association is the result of colonial settlement and exploitation patterns which these countries have not yet been able to overcome.

The more developed, natural-resource-poor countries have had to rely on human resource development as a substitute for natural resource endowments. These countries have not experienced as extensive "colonial" exploitation of their resources and are, therefore, not as dualistic in their structure. As a result, the countries with only moderate natural resource endowments, whether developed to a greater or a less extent, tend to have more equal income distribution patterns.

The extent of direct government economic activity is the next most important variable to differentiate among countries in their patterns of income distribution. It appears in 9 out of 28 splits and is a primary variable in 4 of the splits. The larger the government's share in total investment, the smaller is the share of income of the wealthiest 5 and 20 percent and the larger is the share of the middle income groups. It is interesting to note that this variable has been found not to have a systematic relationship with levels of economic development or with rates of change in per capita GNP; but it does exert a significant impact upon income distribution.

The extent of dualism appears as the first variable to differentiate among countries in four out of the six analyses. Higher dualism increases the concentration of income by lowering the shares of the least privileged 20 percent and 60 percent, by decreasing the share of income of the middle class, and by increasing the share of the wealthiest 20 percent. Furthermore the analysis indicates that, once a sharply dualistic development pattern has been initiated, further economic growth actually reduces the share of the lowest 60 percent. When the dualistic development pattern is primarily foreign-managed and financed, higher GNP tends to lower the share of the middle income households as well. In the absence of government intervention, dualistic growth therefore increases the concentration of income. The extent of cleavage in technology and life styles thus exerts a profound effect upon income distribution, not only in itself, but also by influencing the way in which further development affects the distribution of income.

The extent of potential for economic development is statistically significant in nine of the splits, but appears as a primary variable only twice. Faster growth, when accompanied by improvements in economic institutions, tends to redistribute income away from the two extremes of the income distribution towards the families in the 60-95 percent income brackets. The more dynamic the economy, and the more malleable its institutions, the larger is the share of the middle income groups. However, the more rapid economic growth also increases the proportion of income accruing to the upper 20 percent, even though it decreases the share of income of the upper 5 percent. The effect of economic growth on the share of the lowest 20 percent is not very systematic, but there is an indication that better growth performance tends to lower the share of the poorest households. The overall effect may or may not be an increase in the concentration of income: in two splits, a higher concentration coefficient is associated with higher development potential; in one split, it is associated with lower development potential.

More widespread opportunities for political participation increase the degree of equality of income distribution. This variable was statistically significant in 6 of 28 splits, though it appeared as a primary differentiator only once.

[Excerpted from An Anatomy of Patterns of Income Distribution in Developing Nations. Part III of the Final Report prepared for the U. S. Agency for International Development, February 12, 1971, pp. 1, 6-16, 24-25, 31-34, 38-41, 46-48, 52-55, 58-60, and 69-73.]

Income Distribution in Latin America: Structural Requirements for Development

Raúl Prebisch

[Concentration of land ownership, and industrialization in highly protected markets, have produced inequitable income distribution and are barriers to economic growth. Improvement in both areas calls for structural changes and a drive to increase savings so that growth rates can be accelerated. NOTE: Portions bearing on income distribution are extracted here from a larger report, the major presentation of which appears on pp. 99-124 below.]

Disparities in income distribution date back for centuries in Latin America, and privilege is deeply rooted in the region's history. During the phase of outward-looking development which preceded the world depression of the 1930s, no solution to the problem was forthcoming; on the contrary, increases in income which development brought in its train, and which were substantial in many countries, were concentrated in the few hands that already held land and wealth. Since then, the effects of the process have undeniably been more widely spread out; although it is also true that new patterns of concentration of income have emerged. Those at the top of the social pyramid have conspicuously prospered; the urban middle strata, too, have increased in size and have raised their level of living, although less than might have been the case, and far from enough to satisfy their growing consumption aspirations. But the benefits of development have hardly touched the broad masses relegated to the lower income strata. The percentage of the population represented by

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the latter groups may possibly have diminished, although precise data are lacking. They still constitute about 60 percent of Latin America's total population, although the proportions vary from one country to another. They would seem to have decreased in relative terms; but at the same time the gap between the lower and upper strata has widened.

The broad masses of Latin America's rural population, formerly cut off by illiteracy, are swiftly becoming receptive to radio and television, which bring them nearer and nearer to the beguiling mirage of city life. Beguiling at first, only to prove later on a hotbed of tormenting frustration: the frustration bred of social marginality in the larger towns. It is not just a matter of consumption aspirations; these masses are awakening to consciousness of their long-forgotten dignity as human beings, of their pathetic relegation to ways of life long abandoned by developed countries. Their social integration is of primary importance. It is a question of fair distribution. Let there be no misunderstanding, however: redistribution measures alone will not suffice. The income distribution pattern is defective, and could undoubtedly be ameliorated to some extent under existing conditions. But there will be no substantial and lasting improvement unless the rate of development is speeded up.

The agrarian structure. The structural obstacles to acceleration in economic development are of great significance. They weaken the incentives to technical progress, and deprive the economy of the degree of social mobility that is demanded by such progress, as well as by considerations of equitable income distribution. It is well known that the concentration of land ownership and the proliferation of minifundia in Latin America have, over the generations, inhibited the introduction of improved techniques and the efficient use of land, and have also been a major cause of social disparities. Moreover, even where improved technology has managed to penetrate into these outmoded land tenure systems—as has happened in export-oriented activities and is now happening in agriculture for domestic consumption—it has generally not been able to break them down, but has rather encouraged a tendency for small and medium-sized units to join together to form larger holdings. While the advantages of this process in terms of productive efficiency cannot be disregarded, its aggravating effects on concentration of ownership and on social disparities are equally impossible to deny.

Technical progress through mechanization or through new farm practices that raise yields per unit of land increases the product per agricultural worker. This does not mean, however, that there is a corresponding rise in the income of the masses working on the land. On the contrary, if labor is abundant and land ownership is concentrated in a few hands, the gains deriving from more advanced techniques, in so far as they are not absorbed by entrepreneurial profits, will tend

to be incorporated into the rent of the land and thus increase its value. Furthermore, the rapid growth of the labor force makes it much easier for the landowner to arrogate to himself the gains accruing from technical progress. And the more this happens, the harder it becomes for the rural masses to obtain access to the larger amount of land they would need to be able to share in these benefits. Thus the pressure of the active population on the land increases, minifundia are divided up into ever-smaller plots, and the number of landless peasants grows. Even without technical progress, the rent of the land tends to rise when agricultural demand is brisk. And it also rises—to a very marked extent—as a result of the means of communication and other infrastructural works constructed by the state with resources whose origin is not usually rural property.

For all these reasons, the increase in the product per worker in agriculture—which has certainly taken place—has not led to a corresponding increase in the income of the rural masses, although in some countries movements to organize rural wage-earners, minimum wage regimes and social security systems are bringing about certain changes. Nonetheless, there is no reason to assume that matters will improve to any significant extent until the agrarian structure is changed so as to give land to the rural worker who has none at all and to increase the holdings of those who have some, to the extent permitted by population pressures. This would ensure the rural masses a fairer share in the benefits of technical progress, provided that non-agricultural activities make productive use of the redundant manpower in agriculture and that the indispensable improvements are introduced in marketing methods. Otherwise, social disparities will continue to increase.

Old and new structures. The system of land tenure exerted a dominant influence on the social structure of Latin America during the period of outward-looking development before the 1930s depression. Industrial development gained great impetus as a result of the depression, and superimposed itself on this structure, to which it adapted itself to some extent but which it did not radically transform. It did not—as happened in other areas—necessitate a redistribution of the land, for as a general rule easily accessible land was available for the expansion of agricultural production. Nor was any need felt until recently to open up the vast potential market of the underprivileged masses and extend the social range of demand, because an industrial development process based on import substitution found a market already in existence that grew in step with urban growth. This industrial development has not changed the traditional structure of Latin America's foreign trade, which is still oriented towards the major industrial centers. Primary commodities continue to be exported and industrial goods imported in return, although the pattern is less rigid than it used to be; only the composition of such imports is changing.

Industrial development is taking place in watertight national compartments, under the strong protection of high tariff barriers and of restrictions and prohibitions that eliminate external competition and hamper the assimilation of technological progress and the efficient use of the factors of production. Import substitution is steadily progressing within these industrial microcosms, as the ratio of the capacity to import (i.e., export earnings plus net financial inflows) to the overall product of the economy gradually decreases. Industrialization on these lines is inefficient and costly for the all-too-well-known reasons: markets are small and the spur of competition is lacking. The process bears within itself the seeds of its own loss of dynamism, since industrial development takes place within a closed circuit of costs and prices which, because it has no contact with the world market, discourages exports of manufactures; and these are really essential, for industry needs to stretch outwards in order to develop inwards in depth. By now the loss of dynamism has become apparent in a number of countries.

Structural changes in Latin America's agriculture, industry and foreign trade are of decisive importance: without them, it will not be possible either to give the economic system the requisite dynamic strength or to make it meaningful from the standpoint of social equity. This question of social equity has to do not only with the way in which income is distributed, but also with the actual sources of income in the prevailing social structure. If a large part of the income of the upper strata derives from privilege, from their dominant position in the system, the incentive to technical progress is weakened. The traditional case in point is the appropriation of land rents, both in the rural areas, as described earlier, and also in the cities, as a result of development itself and of the high rate of population growth. Privilege also exists in industry when excessive protectionism makes disproportionate profits possible, despite the high costs of production, and when restrictions on competition or the backwardness of the domestic marketing system allows higher incomes to be obtained than would otherwise have been the case. Participation in the power structure, too, usually carries with it privileges of this kind. In such cases, there is no strict relation between the income of individual persons and their contribution to the production process in its broadest sense. Consequently, in addition to stimulating the growth of income, the structural changes that pave the way for development will also gradually change the sources of income and thus increase the incentives to technical progress.

Social mobility has a very important part to play here. It is both a requirement for and a consequence of development, which it likewise tends to accelerate. Development requires that jobs be filled as far as possible by those most suited for them to prevent the waste of potential talents. In Latin American societies, with their special struc-

tures, a number of factors limit mobility: some are structural, such as the concentration of land ownership and of income in general; the weakness of incentives to improve industry, resulting from over-protection; industry's limited capacity to absorb manpower, with the consequent spurious absorption of labor in services, etc. All this means that the rate at which new jobs are created at the medium and high levels is relatively slow, and thus reduces the possibilities of social advancement. Furthermore, the extremely unequal distribution of income limits access to education even at the primary level for many groups, and makes it difficult at the secondary and higher levels, with all the waste of human talent that this entails. Education and the development of skills at all technical levels are potential factors of social mobility. If this potential is to be realized, economic activity must have a keen sense of the need to increase productivity through technical progress. Thus, there is a close linkage between technology and social mobility. Unless the pace of development is stepped up, occupational opportunities will be too scarce for mobility to become effective. Not only will the effort expended on training be wasted, but further cause for resentment or frustration will be added to the motives already activating or troubling the younger generations in Latin America. And there will be yet more reason for Latin American professionals to leave their own countries at a considerable cost to the region.

Some changes have occurred in Latin America as development proceeded. The traditional groups of landowners and merchants that characterized the period of outward-looking growth have been joined by new elements, their numbers varying from country to country, with industrialists accounting for a steadily increasing proportion. The middle strata are considerably strengthening their position: they have become larger and more diversified, and, through high-level technical specialists and officials, are increasing their influence on the public administration. Thanks to their enhanced trade-union and political power, many groups of workers are acquiring an ability to defend their interests and aspirations. And in a number of Latin American countries labor leaders are beginning to form part of the power structure itself. But these changes are insufficient to permit the pace of development needed to absorb the redundant manpower or satisfy the growing aspirations of the people involved.

The Power Structure: Immediatism and Foresight

The linkage between the economic and social structure and the political power structure is very close. The two form a complex whole, whose different but mutually interdependent components can be separated only in the abstract. Notwithstanding all the changes that have occurred, a special urban constellation has gradually evolved, in which the politically inarticulate and unorganized lower strata are

not making the weight of their numbers fully felt—except at intervals, on particular occasions—in the struggle for income redistribution, a struggle that is being exacerbated as the dynamism of the economy falls increasingly short of what is required. For if industry, construction and mining absorb a too small and decreasing proportion of the increment in the urban (i.e., non-agricultural) labor force, as has been generally true since 1950, and the volume of manpower in services is growing out of all proportion, to say nothing of unemployment, the imbalance thus created leads to ever-mounting tension.

It is politically and also socially understandable that this tension should be relieved through measures to redistribute income by means of mandatory wage increases or public spending. The steady expansion of the groups participating to some degree in the power structure, and the growing calls upon the state to satisfy social welfare aspirations, give rise to a complex set of commitments that, inter alia, conduce to "immediatism" in respect of income redistribution. However genuine its underlying concern for social equity, and however much it may do to alleviate social tension in the short term, this redistributional immediatism does not solve the basic problems. Neither does a repressive approach.

As the lower strata in the cities gradually become aware of their power, they will carry greater weight in the income struggle; and if they are joined by the rural masses, tension will inevitably tauten to a point at which it seriously jeopardizes the operation of a system which, moreover, is far from efficient. But if representatives of the lower strata managed in one way or another to become part of the power structure, there is no guarantee that their combative vigor would not also lead to immediatism, and again the basic problem would be bypassed. Immediatism cannot be assigned to any particular point in the political spectrum, for short-term solutions are sought not only by the staunch defenders of the status quo but also by those who are at odds with it, and who find such expedients an easy substitute for radical changes to which there are powerful obstacles. The net result is that the ills inherent in the existing structure are intensified.

Immediate measures must be merely the first step in tackling the basic problem. This is certainly not an easy approach, but it is perfectly feasible. Basic solutions, however, do not emanate spontaneously from the conflict of interests and aspirations; they require an enlightened and long-range view of the situation that can be achieved only through thoughtful analysis. It can be clearly shown that if the distortions in the structure of employment are eliminated, and the distribution of income is made more equitable, there will be much greater scope for industry and agriculture to expand; and the services sector, freed by this corrective process from its heavy burden of re-

dundant manpower, will be able to participate actively in the benefits of accelerated development. But this is only a future prospect, and if nothing at all is offered in the immediate present, it will be difficult if not impossible to win acceptance for a continuing development discipline.

Immediatism has frequently prevailed over foresight. The latter has certainly not been a dominant feature in the present stage of Latin American development, although there have been government leaders who possessed it and in some countries this has had lasting consequences. However, the problems which arose at the beginning of the present stage of development did not appear to demand such a high degree of foresight. Industrial development is a case in point; given the wide margin initially available for import substitution, simple measures, with immediate economic and social effects, sufficed to spur on the industrialization process. In agriculture, the availability of accessible land made it possible to expand production with no great difficulty, and population growth was not then as rapid as at present. But now that this relatively easy stage has been completed, immediate expedients must inevitably be combined with longer-range measures that admit of no makeshift procedures, not only because of the nature of the problems involved, but also because our knowledge of them is greater today.

Capital Formation and Income Distribution

If it is accepted that any lasting improvement in income distribution must take place within the environment of a more rapid increase in the gross domestic product (GDP), then a key requirement is increased saving and investment. From 1950 to 1968 the percentage of investment in GDP decreased in all but two countries of Latin America. At present no spontaneous forces exist that can raise the investment coefficient. Yet the rate of capital formation must be appreciably stepped up in order to generate a growth rate adequate to meet the population's soaring growth rate and increasing consumption aspirations and the steady rise in the capital/worker ratio which more advanced techniques generally entail.

Let us consider this problem in relation to our projections of the growth rate in GDP which would make possible absorption of redundant labor [discussed more fully in pp. 99-124 below]. The total investment coefficient would have to be raised from 18.3 percent of GDP in 1966-68 to 26.5 percent in 1980 in order to attain a rate of development of 8 percent by the latter year. Given some reasonable assumptions as to the gross inflow of foreign capital (see below), the coefficient of domestic investment would have to be increased from 14.5 to 24 percent. To facilitate the exposition of the problem, conjectural estimates by income strata are presented in Table 1. These figures must be taken as very rough estimates of orders of magnitude, and

the wide inter-country disparities must be remembered. The highest income groups, stratum IV, constitute a relatively small proportion of the Latin American population and absorb a substantial share of total income. Understandably enough, it is the members of these groups that pay the highest taxes and show the highest rate of private saving. Taxes account for 25 percent of their income and 18 percent is saved; the remaining 57 percent is spent on consumption.

Table 1: Latin America: Conjectural Estimates of Income Distribution and Use 1960

Income Stratum	Proportion of Population (Percentages)	Proportion of Personal Income (Percentages)	Average Monthly Income per Household (Dollars)	Use of Personal Income (Percentages)		
				Consumption	Taxation	Saving
I	40	9	35	90	10	-
II	20	10	82	80	20	-
III	35	50	228	77	20	3
IV	5	31	1,000	57	25	18

SOURCE: ECLA/Institute, El estrangulamiento externo y la escasez de ahorro en el desarrollo de América Latina. Análisis de los problemas y algunas de las soluciones (Santiago, March 1970).

One of the keynotes of this report is equitable income distribution. The social integration of the masses relegated to the lower income strata is an imperative necessity. Accordingly, the projections envisage an acceleration of the rate of increase of their personal income to the same rate as the overall per capita growth, i.e., 3.9 percent annually. The present level of consumption among strata I and II is so low that to restrict its expansion is unthinkable, at any rate in the early years of the period considered. The additional savings effort would therefore be incumbent upon the higher strata.

If the whole burden of the additional savings effort postulated were to be shouldered by stratum IV, its per capita consumption would have to be reduced—through increased saving and heavier taxation—by 0.8 percent yearly during the first of the two decades covered by the projection. Thus, in view of what these two items represent today, the proportion of expenditure on consumption in this social group would be cut down from 57 to 36 percent of average income per household. This highest stratum is far from homogeneous. Its expenditure on consumption probably averages about 570 dollars a month per household: in a group within this stratum that constitutes not more than 2 percent of the region's population the corresponding figure must certainly be appreciably higher, and no doubt the capacity of this group to increase the present savings proportion exceeds that of the remainder of the stratum.

Other possibilities must be explored. The middle income groups (stratum III) have been increasing their consumption at an annual rate

of 2.3 percent per household. According to our hypothesis, average consumption per household could expand faster, owing to the postulated growth of average income at 3.9 percent. For example, it might increase at an average annual rate of 2.7 percent and still leave a considerable margin for saving, either directly or indirectly through taxation; this implies that taxation plus private saving would increase from 23 to 32 percent for this stratum. And in that case, what savings effort would the highest stratum have to make? The answer is as follows: although in the early 1970s the expansion of consumption per household in these groups would have to be restricted, over the whole decade their consumption could increase at the significant average annual rate of 1.7 percent; taxation plus savings would rise from 43 to 54 percent for stratum IV (rather than to 64 percent as suggested above).

The foregoing figures are of course conjectural, and these comments should not be interpreted as proposals. Nevertheless, they do indicate an appropriate course to follow in the study of the various specific situations in Latin America. One conclusion can safely be drawn: if in the early years of a development strategy an expansionist policy is pursued whereby the product can be increased fairly quickly, it should be possible to make the additional savings effort—provided it is also accepted that in order to give so powerful an impetus to the Latin American economy a reasonable degree of discipline in the capital formation process is essential.

It is absolutely essential to adopt energetic and persevering internal measures to promote a steady rise in the coefficient of domestic investment. This is unquestionably the most important and also the most difficult task relating to the acceleration of development. The Latin American economy is not saving enough to speed up its development as rapidly as is needed. Land is inefficiently used; the same is true of capital goods; and redundant manpower is still left in the rural areas, while the rest has needlessly gone to swell the ranks of the urban services sector. The economy is at a deadlock: it is not saving what it should because it is wasting its production potential, and that potential is being wasted because the economy is not saving more. Latin America must break out of this vicious circle. And that will be impossible without an initial "big push" to set the machinery of acceleration in motion and an unfamiliar level of discipline to keep it moving.

If the vicious circle were broken, and the expansionist forces of the economy were able to realize their potential so that new investment opportunities were created, how far would a rise in the savings coefficient be spontaneously brought about? Presumably the mere fact that the product rose rapidly during the initial phase of the transition period would suffice in itself to increase marginal savings, as usually happens. But the effort needed to reach the requisite coefficient would be so great that it could hardly be made unless additional saving were

powerfully and deliberately stimulated. The question is how incentives to private investment and discouragement of non-essential consumption could be combined with tax and other fiscal measures that would tap a sufficient proportion of the additional income generated to hasten the process of capital formation.

Latin America has an interesting stock of experience in the encouragement of saving and private investment which must be turned to account; but the scale of the effort required is so great that the imagination naturally looks for out-of-the-ordinary ways of reaching the goal in view. How can firms and enterprises be induced to invest a bigger proportion of their profits? Would tax measures to encourage investment and discourage the distribution of profits be enough? Would it not incite to over-investment in labor-saving equipment, as seems to have happened in some cases in Latin America? This calls for more careful study. So does the following question: in veiw of the exigent demands of the transition period, might not limits be set to the distribution of profits so that they could be used for investment, either in the same firm or enterprise or in others, or in public or private savings institutions? This deserves some thought, since it would allow production incentives to be reconciled with the need for capital formation and the necessity of restricting the expansion of consumption during so difficult a period.

The creation of basically Latin American multinational enterprises in the regional integration process, in which the Inter-American Development Bank (IDB) would play a promotional role, could add an important new area for investment. If these enterprises were not to be exposed to the temptations associated with monopolies, however, it would be indispensable that their establishment go hand in hand with commitments to reduce external tariffs by gradual degrees, so they could become competitive in the world market. The source of profit must be efficiency, not protection; this of course is equally applicable to national enterprises.

Consideration should also be given to other expedients with regard to saving in the middle and even some of the lower income strata. These means might include the creation of capital markets and the more widespread use of instruments for tapping savings—such as adjustable bonds—which have already been successfully tried out in Latin America, in cases where inflation had seriously weakened the propensity to save. Would it not also be possible to interest the staff of firms and enterprises in the idea of investing part of the increase in their real income in shares or bonds issued by their own or other firms? Here again new incentives and devices would have to be considered. In addition, lower income groups could be drawn into the savings effort, mainly through low-cost housing incentives.

Increased capital formation in all the social strata should depend not only on encouraging saving and investment, but also on the discouragement of certain forms of consumption. In Latin America, where there are so many unsatisfied investment requirements, incitements to consumption have continued to proliferate in wide variety. They are provided partly by advertising and the attractive images presented in the mass communication media, and partly by the constantly increasing consumer credit facilities that enable the higher and middle income groups to use a significant proportion of the community's savings potential for expenditure of this type. Taxation is an appropriate instrument for the purpose of restraining this process, but it is not the only one.

With regard to taxes as an instrument of capital formation, the taxation picture in Latin America is far from uniform. There are some countries in which tax pressures are unquestionably severe. In others a margin of tax potential is still available, and in others again—though these are fewer—the tax burden is moderate. And this last group includes some very interesting cases in which the state has managed to mobilize increasing resources by means of savings certificates. The progress made in tax organization and administration in several countries during recent years is deserving of mention. But tax evasion, although less widespread than before, continues on a considerable scale, and this, apart from its intrinsic effects on state resources, is a factor making for inequity. Acceleration of the growth rate of the product combined with tax adjustments would enable the state's financial resources to be appreciably increased. But this is only side of the picture; the other is expenditure and investment.

The state should invest on a large scale in economic and social infrastructure, both because of the requirements implicit in the social integration of the underprivileged masses, and because of the need to lay broad foundations for the expansion of economic activity. The state has been compelled, however, by the political impact of low incomes and limited employment opportunities to expand its current expenditures in order to absorb redundant manpower, and this has been prejudicial to investment in infrastructure and social expenditure. Similar pressures to increase non-investment spending arise for the subsidizing of public service enterprises, and for the expansion of the social security systems with their high administrative costs. If the lack of the required degree of economic dynamism were gradually made good, the state would then be able to regulate such current expenditure more satisfactorily. It could not, however, shirk the development discipline of which we have spoken. It would have to give this discipline expression in a clearly defined program of expenditure and investment, based on an order of priorities consonant with the national development strategy.

Resort to taxation as an instrument of capital formation does not necessarily imply that the state will widen the radius of its direct economic activities; instead, the resources thus obtained might be channelled into private enterprise, through suitable institutional machinery. Although the increase in savings and capital formation is a high priority task throughout Latin America, it must be undertaken by each country in accordance with its own conditions. In all cases an out-of-the-ordinary effort and discipline will be needed to mobilize resources, and governments will of necessity be deeply involved in mounting and guiding the effort and maintaining the discipline; but no particular form of state action is offered as a panacea or general prescription.

State Action and the Market Mechanism

Although state action is still a highly controversial issue in Latin America, it is now acknowledged to be an essential for economic stability. In this respect, an important change took place in the developed countries as a result of the great world depression—and in the developing countries too. Deliberate actions were taken to influence the forces of the economy in order to bring about first recovery, and then development without serious fluctuations. Today all this seems quite natural and beyond dispute, but it was not so in those days of ardent doctrinal controversy. It is also beyond question today that if the economic system is left to its own devices it does not promote equitable income distribution; even large and affluent countries are discovering that huge sectors of their own populations are underprivileged. Despite these changes in ideas on the role of the state in the advanced countries, in Latin America such matters are not always approached with clear-sighted objectivity. In addition to the very understandable opposition to changes in structures and attitudes, there is often some confusion about the role of the spontaneous forces of the economy. Efforts to act upon or influence these forces are confused with state interference in the market mechanism. But there is no basic incompatibility here; rather, the proper functioning of the market mechanism depends in large measure on the efficacy of the structural changes made.

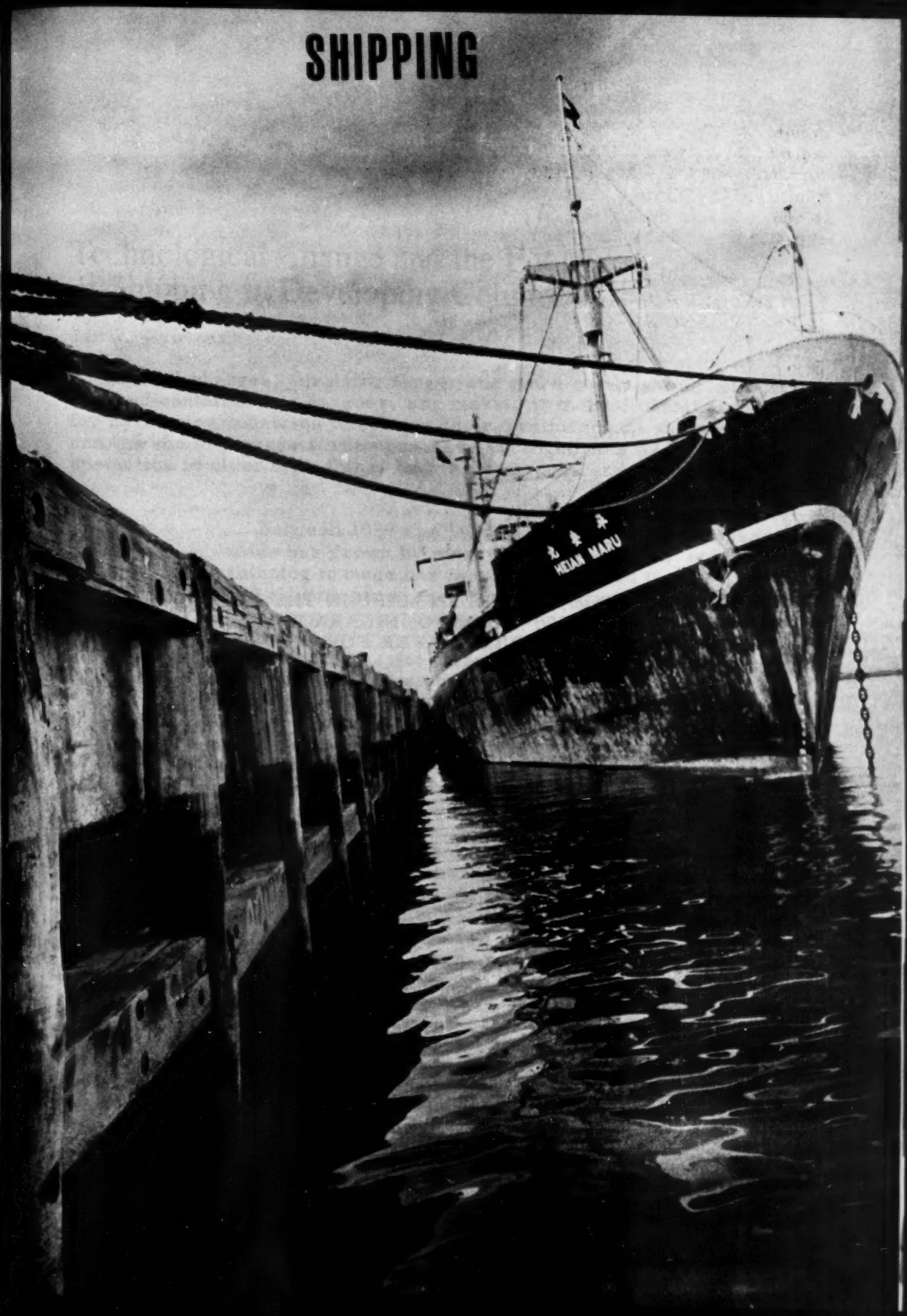
The market mechanism is based upon a prevailing economic and social structure and responds to its needs. It can neither be held responsible for the consequences of the structure, nor be supposed capable of changing it. It must not be expected to do more than it actually can. If the economic and social structure preserves a very unequal distribution of income, then the market simply reflects good or bad consumer preferences; and in accordance with these preferences, it channels the use of investment resources, thus giving a particular configuration to the production apparatus. If this configuration does not coincide with the interests of the society as a whole or the

needs of development, the blame must be laid not on the market mechanism, but on the underlying structure and the income distribution inherent in it. What is essential is for consumers to be able to manifest their preferences through the market mechanism, and for activities serving consumers to be able to respond to these preferences under the stimulus of the economic incentive and of competition.

One truth must be recognized: consumer preferences are influenced by forms of advertising which, in the Latin American countries, are promoting the systematic dissemination of consumption patterns that militate against capital formation. Where restrictions have been imposed on imports of non-essential goods, domestic investment has been encouraged to produce the self-same goods despite the shortage of capital. Nevertheless, the market mechanism continues to be of great value because it operates in a completely impersonal way. However much the size of disposable income and certain forms of consumption may be influenced by the state, it still leaves consumers with a wide range of choice. Under the market mechanism, responsibilities are diffused and decisions scattered throughout all the various activities of the economy. Concentrating decision-making in the hands of a single supreme authority does not give the flexibility and efficiency required in the increasingly intricate complex of economic life, something which even the socialist countries of Eastern Europe are coming to recognize.

[Excerpted from Change and Development: Latin America's Great Task. Report Submitted to the Inter-American Bank. New York: Praeger Publishers, Inc., 1971, pp. 4-5, 124-130, 138-142 and 191-200. Copyright © 1971 by Praeger Publishers, Inc. Reprinted with Permission.]

SHIPPING



THE S.S. HELAN MARU IN THE PORT
OF CERINTO, NICARAGUA
[PHOTO: ROBERT SCHAFER FOR THE WORLD BANK]

Technological Change and the Future of Shipping in Developing Countries

Jan J. Oyevaar

[Technical changes, involving larger and more costly ships, automation and containerized cargoes, are making it more difficult and risky for developing countries to operate their own merchant shipping. They can buy the new vessels when purchase arrangements are favorable, or specialize in older type ships, low value cargoes and feeder services.]

Between 1957 and 1970 the volume of world seaborne trade has grown by more than 130 percent, and world shipping tonnage has more than doubled to an estimated 220 million gross registered tons (grt). While shipping tonnage has not increased quite as rapidly as seaborne trade, it has recently shown an accelerated growth: 37 percent of the total increase in the world merchant fleet in the 13-year period occurred during 1967-70. This growth in tonnage has occurred mainly in the tanker and bulk-carrier fleet. As against an overall increase of 58 percent in world shipping tonnage during the six years since 1964, tanker and bulk-carrier tonnage registered increases of 72 and 180 percent respectively. The rate of growth in the remaining categories, such as cargo liners, was only about 8 percent. The last figure is pertinent because of the emphasis developing countries currently place on the liner trade in discussions of world shipping. A limited number of flags have accounted for the major part of the growth in world shipping tonnage since 1957: Liberia, the United Kingdom, Japan, and Norway in the case of tankers; Liberia, Japan, and Norway in the case of bulk carriers.

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World shipping market. In the last 100 years the organization and development of shipping services has been left largely to the uncoordinated efforts of private entrepreneurs in the conditions of a free market. Until recently, abrupt shifts in demand and drastic fluctuations in the prices for shipping services were frequent, and these often bore no relation to the actual transport costs. But this market structure in which free market factors are the major determinants of transport prices is gradually changing. In the first place, the activities of several governments that own or assist their national merchant marines or that intervene with their maritime industry exert an influence unrelated to free market factors on freight-rate setting. Second, shipping in industrial carriers belonging to vertically integrated enterprises forms an increasing part of the world's tonnage. This sector of the shipping industry generally operates outside the purview of the free market. Petroleum companies are the major operators of integrated fleets, but many enterprises engaged in the production or processing of basic materials such as iron ore, bauxite, grain, sulphur, sugar, and liquefied gas have also followed suit. They do not necessarily own all the ships under their control, but they hire ships on long-term time charter and then operate them in integrated fleets. Third, the liner trades, increasingly organized in "conferences" of one kind or another, are less susceptible to open market conditions. Liner conferences, which regulate ship arrivals and rates over a given route, are designed to absorb the effect of short-term market fluctuations, thereby nullifying the effect of free market factors on the determination of freight rates. As a result of these three factors, free competition operates directly and unhampered only in a diminishing sector of the world shipping market, and in this smaller sector under- and over-supply may be even more accentuated than has been the case in the past.

Since World War II, two distinct schools of thought on the operation of the shipping industry have emerged. One school of thought, the "free market" school, holds that shipping services should be provided by private enterprise on the basis of free competition and that the choice of ship, whatever its flag, should be the prerogative of the shipper. The other school maintains that governments must take the ultimate responsibility for the provision of shipping services under the national flag, and that this responsibility should be fulfilled if necessary by such means as flag preference, bilateral agreements, fiscal incentives, and many other visible and invisible incentives. It is in liner shipping that the controversy between these two schools has become most obvious. The free market advocates, whatever the merits of their arguments, have not succeeded in stopping or containing the practices they oppose.

The advocates of a "free market" are to be found mostly among the shipowners of the so-called traditional maritime countries, often sup-

ported by the governments of these countries. Their aim is to maintain their dominant position in the maritime traffic between other countries and their own, and to continue their influence in cross-trades between other countries. The followers of the "protectionist" line are the two superpowers, for whom this policy is part of a global security policy, and the newcomers to the shipping industry. It is not surprising that developing countries belong to the second category. While about 65 percent of the volume of seaborne trade is generated by production in developing countries, these countries' fleets amount to only 7 or 8 percent of total world tonnage. Sixty percent of the world's tonnage is registered under only six flags, namely those of Liberia, Japan, the United Kingdom, Norway, the United States and the Soviet Union.

Profitability. Vast fortunes have been accumulated by some shipowners, but these fortunes were not built on liner shipping. Although no worldwide figures are available concerning profitability in shipping, it is beyond doubt that the profitability of liner shipping is at best moderate. This fact has been established for the shipping industries of the Netherlands and the United Kingdom in two fairly recent reports: the Oyevaar Report issued in December 1968, and the Report of the Committee of Inquiry into Shipping (Rochdale Report) issued in May 1970. These reports may differ in scope and depth, but they run parallel in their conclusions about profitability. According to the Rochdale Report, the rates of return on capital employed in British shipping for the years 1964 through 1969 were: 1.7 percent, 3.6 percent, 3.3 percent, 1.3 percent, 2.1 percent, and 4.8 percent. The Oyevaar Report on Netherlands shipping showed that over a period of eight years up through 1968 the economic viability of the shipping industry was negative throughout the period, taking into account the replacement value of assets. Thus there are grounds for the statement heard in shipping quarters that the liner trade is a luxury which can only be afforded when combined with tanker and bulk-carrier operations.

Technological Change

The results of technological change appear in the following forms:

Unitization: combining small components of a load into a larger single unit for carriage on the ship. "Pallets," large platforms with side supports, are increasingly used; a more recent innovation is the "container"—a metal box usually 8 by 8 by 20 feet or 8 by 8 by 40 feet.

Container ships: ships designed for carrying containers. "Containerization," an important current trend in shipping, also requires special shore equipment for loading containers and moving them by rail or truck.

Roll-on/roll-off ships: vessels designed so that laden vehicles (including containers) can be driven on and off ships; a wheeled trailer,

or sometimes a whole vehicle, is left on board to be rolled off at the ship's destination.

Lighter-aboard-ship (LASH) vessels: vessels designed to carry large barges or lighters, each loaded with 500-600 tons of cargo. When outside a port or river mouth, a LASH vessel can unload one of its barges with cargo to be moved separately to its destination.

Mammoth tankers: the largest petroleum tanker in 1960 was of 100,000 deadweight tons (dwt) and tankers of less than 50,000 dwt were more usual. By 1970 tankers of 300,000 dwt were operating, tankers of 470,000 dwt were on order, and twice that size is technically feasible. In addition to size changes, tankers are increasingly designed and used to carry other liquid or liquefiable goods in bulk, e.g., vegetable oils, wine, methane and ethylene gas, latex (liquid rubber), liquid sulphur, and many others.

Oil-bulk-ore (OBO) carriers: ships designed to carry bulk commodities like oil, ore, or grains. "Super bulk carriers" of 200,000-250,000 dwt are now in use.

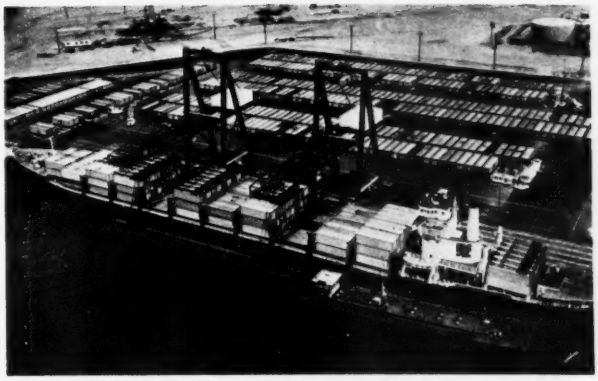
Gas turbines and nuclear propulsion.

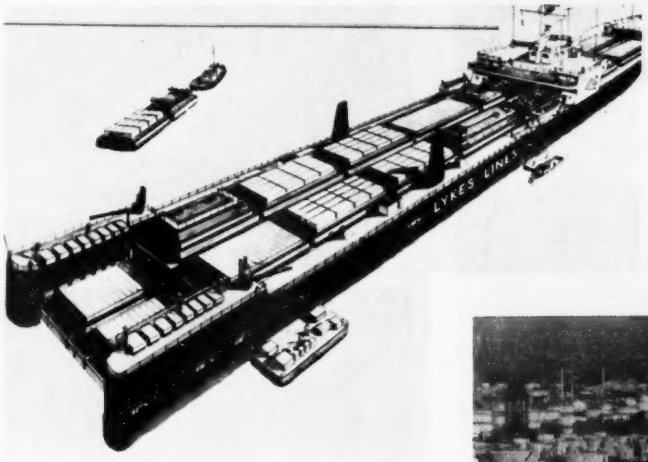
Automation: navigation and other operations on board ship are increasingly automated, and computers are used in the operational sector of ship management.

In the carriage of oil and other cargoes transported in homogeneous shiploads, ship sizes have become possible in the past five years that not so long ago were unthinkable. Since 1966 there has been an accelerated growth from the 70,000-ton to the 200,000-ton dry-cargo bulk carrier. The introduction of the container ship and the LASH system dates back only a few years, and it came as a shock to many shipowners since it revolutionized trading conditions. Sea transport has become just one link in an integrated transport chain involving road, rail, river, and ocean transport.

These developments in vessel size and type require modern investment programming. They imply much higher investment per unit of carrying capacity; investments in complementary facilities must also be of a higher order than they were in the past. At the same time these improvements imply a measure of capital loss on existing vessels which, though they may still be first class, no longer fit the pattern of an integrated transport chain. This high level of investment, the accompanying need for quick turn-around time (time spent in port) of the ship, and the larger carrying capacity to be filled on the outward and the return voyages necessitate a closer cooperation than before between shipping enterprises. This need has manifested itself in the formation

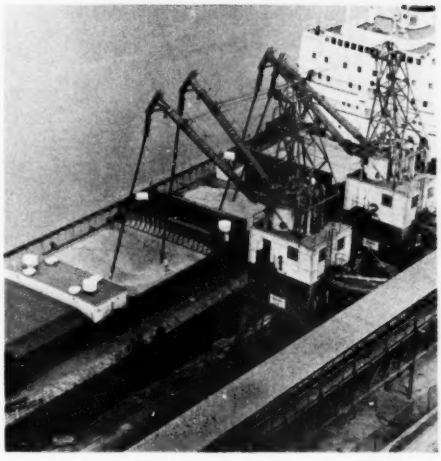
Right: Container ship.
[Photo: Freuhauf Division.]



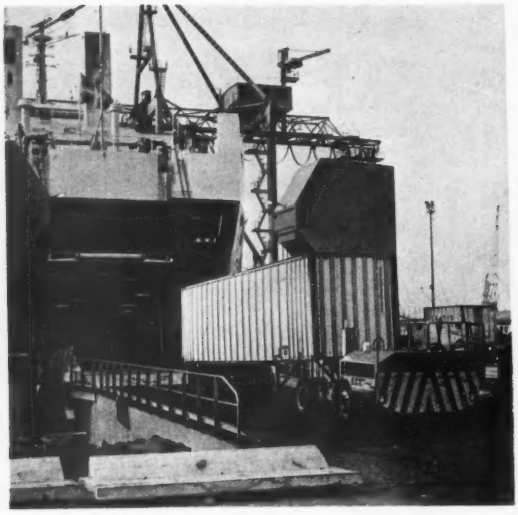


Left: LASH vessel.
[Photo: Lykes Bros. Steamship Company, ILO Panorama, No. 41, March-April 1970, p. 15.]

Above: Large oil tanker. [Photo: Humble Oil & Refining Company.]

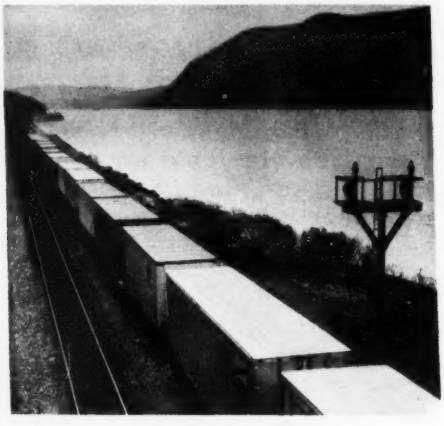


Left: Bulk grain ship. [Photo: Ray Witlin for the World Bank.]



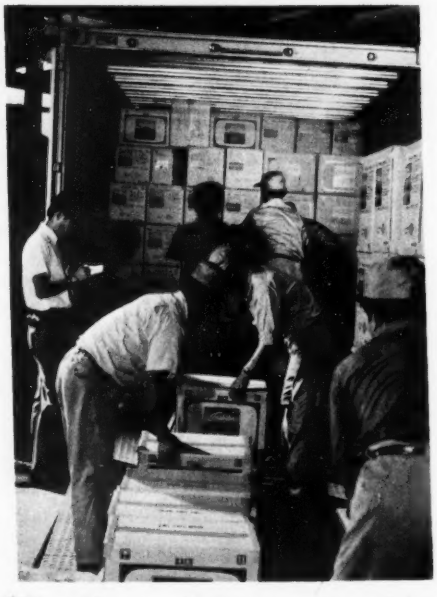
Left: Container roll-off. [Photo: Schaart en Buyse.]

Below: Containers on railroad. [Photo: Port of New York Authority.]

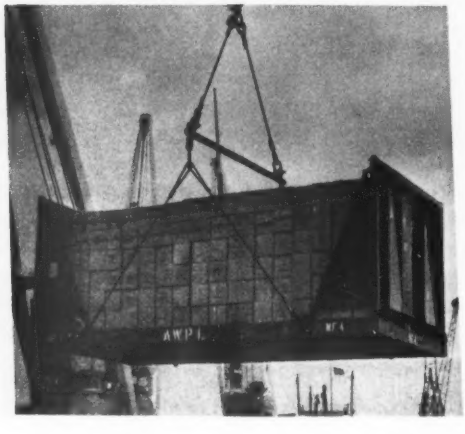


Below: Container on truck. [Photo: Port of New York Authority.]

Below: Loading a container. [Photo: NYK Line.]



Below: A Pallet. [Photo: Australia West Pacific Line.]



[NOTE: Above photos appeared in ILO Panorama, No. 41, March-April 1970, pp. 12, 15 and 17.]

of consortia, large multinational organizations with managerial control concentrated at one point.

Cost factors in shipping. Capital investment in new ships, repair bills, and fuel costs are determined mainly by international factors, whereas the costs of time spent in ports, of loading and discharging, and of management are mainly determined by national factors. The principal cost factors are:

a) The costs of cargo-handling—genuine national costs—which constitute a major portion of the cost of transport on "liner terms," at least under the conventional system of carriage that is still typical for trade with and among developing countries. (Liners are ships operating on fixed routes and schedules, offering non-specialized cargo and/or passenger carrying services at predetermined rates.) The conventional method of cargo-handling is labor-intensive and its cost depends upon the wage standards of the port of call.

b) The turn-around time of vessels in port is of major importance to the cost of transport. Costs vary substantially from port to port and country to country according to the speed of cargo handling, the waiting time before the ship can dock, and the non-working time for stevedores while ships are docked. Time in port costs shipowners $2,000-$5,000 a day, increasing with the size of ship.

c) The volume of cargo, its growth over time, the change in its composition and in tonnage balance to and from the home ports, which are factors of direct relevance to technology and to the scale of shipping operations.

d) The adequacy of infrastructural facilities in ports and their hinterland.

The considerable geographical variation in each of these factors and the variation in their relative importance complicate the determination of the shipping industry's operational and capital costs. The problem before the industry is to discover the most suitable and cheapest method of transport in the light of these complex factors. Where ship operation is confined to two ports, trends observed with respect to national labor costs, port handling costs, turn-around times, and the volume and composition of cargo can, in such cases, be fed into optimization models to get low cost solutions to operational questions. But it becomes quite a problem when shipping operation extends to several countries and even more ports of call, which is the case with the vast majority of liner vessels. The economies of scale and those of the newest techniques for the carriage and handling of general cargo constitute strong inducements for the shipowner to eliminate or avoid bottlenecks in the operation of vessels. Ports of call must be chosen

with a view to factors such as rapid dispatch possibilities, draft (depth of water) in ports and approaches, and the adequacy of inland transport routes. The continued existence of these bottlenecks in some developing countries, the elimination of which is very often beyond their power in the short run because of draft limits in ports, restricted cargo volumes per shipping period, and lack of modern capital-intensive loading equipment, add to their transport costs.

Motivation for technological innovation in shipping. In the developed countries there is a tendency for the cost of labor to rise as compared with the cost of capital, and the search for new labor-saving, capital-intensive technologies adapted to this situation started in the centers of the industrialized world, with the United States taking the lead. The present significant changes in shipping are influenced by the existence of worldwide variations in absolute levels of productivity and nominal labor costs, and especially by the fact that labor costs rise relatively faster in the ports of most developed countries than in other countries (causing the discrepancies between absolute wage standards to grow). In some cases the conditions and trends in a single country have been a sufficient inducement for the introduction of the new technology. Because the overwhelming part of world seaborne trade touches the main port areas of the industrialized world, the ocean shipping scene is dominated by technological innovations in transport stemming directly from economic conditions in developed countries.

New solutions in transport generally are sought in order to lower the cost of transport. The cost of carriage affected by some innovations can be related to the sea leg of ocean transport alone. However, in the case of containerized transport one must compare the total cost of the entire transport chain (including inland transport and transfer costs on both sides) with the cost before the advent of containerization. The colossal growth in the volume and value of trade of the developed regions of the world provides so much scope for specialization of vessel types for single commodities that considerable cost reductions in transport can be yielded through economies of scale. The main types of new shipping technologies and their relative merits can be characterized as follows:

a) Fully containerized services require a fairly well-balanced and substantial flow of physically "containerizable" cargo as well as sufficiently developed infrastructures for inland transport to enable the ocean vessel to restrict drastically the number of ports of loading and the discharge. This method produces important savings in port labor costs and/or ship's time in port to compensate for the high cost of investment. It also reduces the labor element in cargo-handling.

b) Unit-load services by modern but traditionally equipped vessels (e.g., with pallets) also require a fairly well-balanced flow of parcel

goods. Unlike the containerization method, this process does not require a developed inland transport system and continues to serve a fair number of ports of call. It offers far less scope for economies derived from increasing vessel size and is better adapted to the needs of small and medium-sized industries.

c) Barge-carrier systems (LASH) require the introduction of large vessels which are structurally elaborate and costly. LASH vessels can adapt to imbalanced trade flows, since they can take bulk cargoes. This system does not require drastic limitation in the number of ports of call, and it permits the maintenance of relatively labor-intensive methods of cargo-handling (from lighters). This system also integrates ocean transport with that on inland water systems and provides an opportunity for the volume of containerized cargo to increase gradually—though at the price of some over-investment—since the provision of barges to carry containers imposes an extra cost.

The Effect of Technological Change on Shipping in General

The evolution in the carriage of goods in containers and LASH vessels creates a problem for the lower-paying types of cargo—for example, parcels of fertilizer—which formerly were carried together on the same vessel with higher-paying cargoes. It is normally not economical to transport potatoes in a Rolls Royce. Freight-rate setting was traditionally based on a kind of ad valorem system: the limited returns from transport of low-paying cargo have to be offset, if possible, by the transport of high-paying goods, the latter in a way subsidizing the former. This is no longer the case.

Another problem created by the new sophistication of liner trade is the access of newcomers to a trade route. It is no longer a matter of "fighting" a conference that excludes newcomers, which in certain instances could be done with low-quality, cheaply-run ships with calculable financial risk and some chance of success. In modern liner shipping, individual management power yields to a multinational authority, which controls not only frequency of service and rate-setting, but also infrastructure and agency arrangements in an integrated system. In order to participate in such a system, the would-be member must be able to contribute a unit, or several units, of tonnage (or the monetary counterpart thereof) on a level incomparably higher than that of the old "fighting ships." It will increasingly be a consortium rather than a more loosely organized conference with which he will have to deal.

The principal effects of technological changes in shipping are manifold:

a) Modern developments tend to reduce the number of men engaged in shipping, because of both automation and the reduction in the total number of ships due to their greatly increased sizes. There is an increase in the quantity of capital per transport unit in relation to the quantity of manpower (capital-intensiveness).

b) The transport performance per transport unit increases considerably. As a consequence, the total investment in desired or required transport capacity can be lower than in the case of the conventional fleet; thus the cost of transport can also be lower.

c) Because of the smaller number of units required to maintain the same transport performance, entrepreneurial risk increases. It will be difficult to cope with unforeseen mishaps; vulnerability increases.

d) In liner shipping, integration between the sea leg and the land leg will increase, notably at the instigation of the shipping sector, which cannot afford to leave the land leg to third parties.

e) The high investments due to the complexity and size of ships make time-saving in ports of paramount importance. In spite of nationalistic pressures, long-distance services will have to be concentrated in fewer ports, and these ports will have to provide first-class transfer facilities from the long-haul carrier to the short-haul carrier, and vice versa, involving further high investments. Since such cargo concentrations will call for feeder services on an increased scale, technological change will also spread to vessels engaged in these services.

f) Notably in liner shipping, but also in bulk carriage and tanker shipping, the formation of international consortia will become increasingly important and will further limit competition. The individual shipowner will have insufficient resources to provide container ships or—even less—LASH chips on his own, nor could he bear the risk; the shipowners of the world, whether individually or through national consortia, will therefore continue to join international consortia.

g) Modern cargo-handling and modern methods of propulsion permit quicker and more efficient service.

h) In the liner trade, it will still be necessary for vessels to carry low-paying goods. This may give a new impetus to the development of simple but modern (possibly multipurpose) liner vessels.

How Technological Change Affects Developing Countries

In the long term, the international trade of developing countries may be favorably influenced by the lowering of the cost of transport;

given certain conditions, containerization should lead to lower cost per unit for imports and exports of finished industrial goods. Export in large quantities of raw materials, the main export items of developing countries, permits increased use of large bulk carriers. In both of these modes of transport freight costs should in principle be lower than in conventional transport. If the developing countries are to benefit in this manner from technological change, they must, at the cost of considerable investment, adapt themselves to it and improve their transport infrastructure: roads, waterways, railways, and ports. In taking a decision in this respect, countries should not lose sight of the social costs and benefits.

The incentive for developing countries to invest in container ships, LASH vessels, and bulk carriers (as opposed to the related infrastructure) is indubitably less than it was for investment in traditional shipping. It is true that the diminishing influence of the labor factor in ship operation is a process that started long ago with the evolution of means of propulsion from sail to steam and from coal to oil. The point is that the present sustained efforts of developing countries to strengthen their participation in shipping coincides with considerable further diminution of the labor factor due to automation and the decrease in the number of ships, which cuts down the competitive advantage these countries may have from their lower-cost (but less skilled) labor supply. This tendency will continue and will receive new impetus when, in the not too distant future, nuclear propulsion replaces the diesel motor (the "sealed" engine room); computers, electronic controls, and satellites are used for navigation; and the increasing use of synthetic materials diminishes the need for manpower to maintain them. It could be of interest to study the possibilities of adapting technological developments to the needs of the developing countries. It is an agonizing problem that changing technology—the child of the needs of the industrial countries and the fruit of their research and knowhow—affects developing countries intensely but has no root in their needs.

A big problem for countries desiring to increase their shipping role is to gain entrance into the new rapidly growing worldwide structure, the multinational organization or consortium. This situation suggests continued dependency of the developing countries on the developed countries insofar as the consortia are solely dominated by the latter. For developing countries, there is the possibility—once the problem of finance is solved—of joining hands and creating consortia among themselves for container ships or bulk carriers. It is also possible that mixed consortia may be set up comprising both developing and developed countries. It remains of importance for developing countries, however, to consider the increased vulnerability of the shipowner. If a country were to build up a service with two container ships, replacing, for instance, seven conventional ships, the risk of a marine accident

putting one vessel out of action becomes one in two instead of one in seven. The service would be entirely disrupted by such an accident; this would not be so with the old system.

What Alternatives Do Developing Countries Have?

There are three possible ways developing countries can react to the challenge of technological change in the shipping world: to oppose it, to be passive toward it, or to participate in it actively. Opposition to technological change in shipping seems undesirable a priori; it is saying no to progress. Yet, there is at least one developing country which has forced certain liner conferences to allocate predetermined shares of the aggregate conference revenue to individual conference members regardless of their actual performance. In practical terms this means a rejection of the influence of progress in shipping, as it enables the national fleet of the country concerned to continue its operations with economically obsolete ships without suffering directly any loss of income, fully protected against the competition from other members of the liner conferences which may modernize. The government in question will probably have to subsidize its national shipping indefinitely, and its exporters will have to pay higher freight rates than those of competing countries. Higher freight rates would also mean higher import prices. This form of opposition to modernization in shipping thus lays a heavy burden on the present and future production of the country, and it is a more or less disastrous policy from a general shipping point of view as well.

A passive attitude toward the challenge of technological change could be the right answer for some developing countries if they decide to refrain from active participation in the shipping field. Economic considerations, such as the greater productivity of alternative uses of labor and capital, can motivate such a decision. A passive attitude does not deny a developing country the opportunity of profiting from the cheaper and better modern shipping services supplied by other countries, provided that the country concerned makes the necessary investments in ports and other infrastructural facilities to handle the new ships. The disadvantages of passivity are those expressed in the past by nonmaritime countries: namely, a certain degree of dependency on others, especially in case of wars or political upheavals causing a disruption in foreign trade; reduced opportunities for the acquisition of technological knowhow; and hardly any insight into the activities of the shipping companies serving their ports.

It can be argued that—leaving aside considerations of prestige and security—the degree of participation in advanced shipping must be determined by its net impact on a nation's economic growth and on its balance of payments. The net balance-of-payments effect of shipping is considerably influenced by whether or not ships have to be built

abroad and imported. The construction of the larger classes of ships is today predominantly a preserve of the industrial countries, and the odds are that in the foreseeable future the technologically advanced ship will continue to be an import article for most developing countries. The effect of importing vessels on a country's economy is less severe when builders' credits from abroad for ship financing are available, as has been customary in past years of heavy competition in shipbuilding. In the tight shipbuilding market of today, possibilities for such credits look remote; but a boom period in shipbuilding is likely to be followed by a slack period, leading to stiff competition for markets among shipbuilders once again.

The net contribution to the current account of the balance of payments of a national merchant fleet (omitting the capital cost of imported ships) varies from 20 percent to 60 percent of gross freight earnings. It is not clear what net effect technological change in shipping has on this contribution, since technological improvements in shipping reduce the share of national crew costs, but at the same time save foreign exchange costs such as stevedoring expenses. The effect on other foreign exchange costs (such as insurance, repairs, fuel, and port expenses), which differ according to the different trades, is also unclear. The continued use of vessels that have become economically obsolete may either lead to increased freight rates or cause national flag shipping to become less profitable (or more unprofitable). The impact of technological change on the cost of transporting exports and imports, and on the quality and pattern of transport services, will have indirect balance-of-payments effects. Most of the factors influencing the balance of payments also affect national income. In addition, shipping produces social benefits and social costs that are not accounted for on the enterprise level, but these have never been quantified, so that the effect of technological change on them is unclear. In general the ratio of total invested capital to net output in shipping is already high, and it will increase as a consequence of technological change. As mentioned above, return on capital employed in liner shipping is low. In open-charter operations this return is fluctuating, and though, at times, with luck, these returns may be high, the financial risks are great.

It would be presumptuous, even if it were possible, to draw up a blueprint for the participation of developing countries in shipping on the basis of present-day technological progress, but a few observations can be made. If, for various sound reasons, there is a case for a developing country to participate in the new shipping processes, the acquisition of technical expertise seems to be the first step required. Acquisition of adequate management competence in organizing and running efficiently modernized shipping operations is also essential. The transfer of technological knowhow in general is already receiving the attention of UNCTAD, but it would seem necessary that the subject—including financial aspects—also be placed on the agenda of its Committee on Shipping and given top priority. It is of primary concern to

developing countries, not only because of their shipping activities but also because of their interests as shippers. There may appear to be reluctance on both sides: on the one side, pressure may be exercised by developed countries to "tie" such assistance for transfer of expertise to their desiderata regarding participation in shipping or in allied fields; on the other, there may be hesitation on the part of developing nations to having foreigners meddle intensively in their shipping matters. Even if the developing countries are able to obtain technical knowhow for establishing a shipping industry, heavy investments will be needed to develop easy access to their ports for the new ships. In addition, the efficient organization of ports and creation of the necessary transport infrastructure may be important requirements to prevent bottlenecks in the shipping operation.

There seems to be a way for developing countries to make their entry into modern merchant shipping without straining their balance of payments and with reduced financial risks, notably in the sector of tankers and bulk carriers. This envisages the possibility of a developing country having bulk carriers or tankers built with foreign builders' credit on the basis of prearranged charter to first-class charterers at a price sufficient to cover repayment of capital and interest within a number of years, leaving the owner with a debt-free remaining lifetime of the vessel. Such arrangements, of course, can become possible only under certain market conditions and a certain pattern of overall trade relations between a developing and a developed country. For instance, a situation could exist in which a developed country desired access to the sources of raw materials such as logs, bauxite, ore, or oil in a developing country. As part of agreements in this field, the developed country could arrange for a builder's credit for a tanker or bulk carrier to ensure the participation of the developing country in the carriage of these raw materials to their destination on the terms indicated.

For countries which are unable or unwilling to buy the new costly vessels, there will be scope for the operation of second-hand ships for the carriage of low-value cargoes during a period of transition. They need not be old, but only economically obsolescent as a consequence of technological change. Initial costs and foreign currency requirements are lower in this case. The life cycle is shorter than that of a new ship, and the risks of capital loss due to obsolescence are already discounted.

The use of very capital-intensive vessels will lead, and is leading, to the concentration of activities in a limited number of ports. This trend will necessitate the increasing use of feeder services to and from the other ports in areas served by the main ports. This would be a sector in which low labor costs would have the greatest impact on total operating costs, and where the smaller, older-style ships

would retain their usefulness. The building up of an efficient feeder transport service might well contribute more to the maintenance of competing freight rates than participation in deep sea container lines themselves.

Little mention has been made so far of the tanker trade which is an increasing element in the total. Mineral oil carried by tankers made up 55 percent of the volume of world shipping in 1969. But the greater part of oil tanker tonnage is owned by the oil companies, and an additional part is on long-term time charter with them, so that only a small portion of the tanker trade is on the open market. Shipowners in developing countries can try to get a share of this limited tanker trade, but the extent of their success in this venture still depends upon the decision of the oil companies, which at the present time retain the choice of flag.

The Future

The technological changes in the shipping industry are expected to force the liner conferences gradually to recede in importance. The conference system is tantamount to a quasi monopoly. Discussion over the merits or demerits of the conferences may become superfluous, however, because it is altogether likely that cooperation between shipowners will in the future be taking place in a smaller number of multinational consortia of a much more powerful and monopolistic character. The headquarters of such multinational organizations should be wisely chosen and tactfully spread over developing and developed countries alike. In cases where the headquarters are established in a developed country, the creation of branches in cargo-generating centers in developing countries might help to make all parties feel that they are involved. The location of the headquarters in countries granting tax and other incentives depends on both immaterial and material factors; the measure of attractiveness that countries can offer in the years to come is likely to be a factor of importance.

What happens if the power of the consortia is abused? Abusive policies of cartels can be controlled on a national basis by national legislation, but there is at present no authority to exercise international supervision of cartels in shipping, or in any other worlwide field of economic activity. It is, first and foremost, the responsibility of the new shipping groups to see to it that no malpractices arise, and there is no reason to expect that they could not do so by self-restraint and self-discipline. Further, the advent of shippers' councils in many parts of the world is of great help as a checking and balancing influence on the existing conferences. As the shipping organizations grow stronger and more all-encompassing, the responsibility of their leaders will grow—and the balance may well be kept by public opinion and the stronger organization of shippers' councils. It would be beneficial if

a "code of principles" were to be drawn up by the interested shipping groups—the voluntary submission of the members of the group to self-made, clear rules indicating what guarantees they would create against dishonest, unfair, or negligent treatment of shippers and other interested parties. The Rochdale Report suggested such a code in reference to conferences.

One can have great confidence in the adequacy and honesty of self-regulatory machinery to be established by the shipping industry itself and yet recognize the desirability of an instrument for international supervision if self-regulation does not work, or does not work properly. The working out of the regulatory machinery of the industry and the international community should be the objects of parallel study and effort. Whatever the wishes and ambitions of developing countries—which may differ from one country to another—it should be recognized that these cannot all be translated into realities in the near future. Developing countries can take pride in the fact that of all the international agencies, UNCTAD has the greatest impact on world shipping economics. They should therefore use this instrument with the greatest discretion, much less as a pressure group and more as a forum in which, in mutual cooperation and understanding, sound solutions satisfactory to all sides can be hammered out. As a result of all the strife, trouble, struggle for power between shipping blocs, and a sometimes acrimonious dialogue between the "traditional maritime countries" and the others, a world code or charter of shipping principles may ultimately be born: a code containing rules for the transfer of expertise, for the way in which developing countries will be enabled—other circumstances permitting—to participate in shipping at the highest technical level; for the manner in which the interests of non-maritime countries can be safeguarded; for the conduct of consortia (and the conferences that survive); and for the degree of international governmental supervision that leaves the first responsibility with the industry itself. All parties concerned should learn to forget about the past; problems must be seen in a new light, and it is essential to concentrate on the future.

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Increasing the Participation of Developing Countries in Shipping

M. G. Valente

[There are many reasons why developing countries should own a merchant fleet and expand their limited role in transporting their foreign trade. Government assistance will be necessary to build up their shipping industry, as it was for the developed countries at an earlier stage in history.]

Transport is an integral part of the production process and therefore has a direct bearing on any country's economy and development. Maritime transport is paramount for developing countries that are largely dependent on what is still recognizable as a semicolonial pattern of trade with more or less distant developed countries, i.e., that import a wide range of industrial goods in exchange for a few primary products. Those developing countries that already have, or aspire to have, merchant fleets of their own, may tend to look at these problems from the carrier's viewpoint, while other countries tend to approach shipping problems primarily from the user's angle. Whatever their approach, all developing countries are now unanimous in acknowledging the importance of shipping to their national security and economic development.

The importance of shipping was only dimly perceived when the first round of discussions on the challenge of underdevelopment took place in the early 1950s. At that time, economists and planners placed little emphasis on the behavior of services in trade relations between developed and developing countries. The debate on the ways

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and means of reducing the gap between the developed and developing countries centered on increasing productivity, industrialization, and expansion and diversification of visible exports. Little attention was paid, either at the national or international level, to the foreign exchange deficits incurred by the developing countries in invisible transactions in shipping and insurance services; satistical information on these transactions was lacking. A break occurred in 1964, however, when the first session of the United Nations Conference on Trade and Development (UNCTAD) placed an item concerning invisibles on its agenda. Preliminary studies on this subject had been prepared, among them a study by the International Monetary Fund which showed that for the developing countries as a whole, out of a total payments deficit on goods and services of $5.4 billion in 1961, the deficit on merchandise freight and insurance was about $2.14 billion, with freight accounting for $1.95 billion, or just over one third of the total deficit. The balance-of-payments deficit accruing to the developing countries on account of merchandise freight and insurance costs is considerably higher today than it was ten years ago, since the value of world trade has nearly doubled since 1961. Figures for particular countries, e.g., Brazil, clearly indicate the importance of freight deficits in their overall payments accounts.

The published figures on services transactions, however, do not reveal the full impact of freight costs on the developing countries. When goods are sold on a c.i.f. basis, the exporter or his agent is responsible for the payment of freight, and when the commercial operation is made on an f.o.b. basis the importer pays the freight. But it is neither the exporter, in the first instance, nor the importer in the latter, who will necessarily bear the actual costs of freight when the adjustments in product prices are taken into account. In practice, the relative supply and demand elasticities of a product determine who bears the major part of the transport costs. Since a situation of completely inelastic demand or supply does not usually prevail, the burden of transportation will be shared between importer and exporter, but this sharing is more often than not unbalanced to the detriment of one party. A recent UNCTAD secretariat report, analyzing the incidence of transport costs, concluded:

> For many of the world's agricultural products, on which developing countries rely for much of their export earnings, supply elasticities are low in the short run.... Although overall demand elasticities for most of these commodities are also low, the elasticity of demand facing the individual supplier or the whole group of suppliers in a single country is likely to be relatively high unless that country is the only source of supply and there is no ready substitute for the commodity.... The supplier in these cases therefore normally bears the bulk of the transport costs and any increase in these costs is matched by an almost

> equal decline in his net receipts per unit sold.... Although the elasticities of demand for many manufactured products tend to be relatively high in developing countries, they remain lower than the elasticities of their supply to the countries concerned. Thus the major part of the freight rates is borne by the importers.

It can be deduced from these conclusions that when it comes to freight costs, the developed countries are playing a game governed by the rule "heads, I win; tails, you lose."

The Share of Developing Countries in Maritime Transport

The UNCTAD investigation of shipping which "discovered" the large freight deficits of developing countries also exposed the striking imbalance between the volume of seaborne cargoes originating in these countries and their cargo-carrying capacity. Figures for 1968 indicate that of all cargoes loaded (2.06 billion tons) about 63 percent originated in developing countries. These countries are the source of nearly 90 percent of all tanker cargoes—crude oil and petroleum products—which account for more than half of world loadings; the share of developing countries in dry cargo loadings is about 33 percent. These are the trade flows to which the developing countries must first look in seeking to participate in the carriage of maritime cargoes. Yet the present carrying capacity of their merchant fleets is utterly inadequate to claim any significant share in the cargoes originating from their territory.

The total tonnage of world merchant shipping has grown from 146.8 million gross registered tons (grt) in 1965 to 217.9 million grt in 1970. In 1965 the developing countries owned 11.4 million grt; in 1970 their fleet stood at 16.6 million grt. Despite this increase, their share in the world merchant fleet fell from 7.8 percent to 7.6 percent. The imbalance between the share of developing countries in the supply of cargoes and their share in the supply of shipping is most marked in the tanker market, where the dominance of developing countries as suppliers of petroleum contrasts strikingly with their virtual nonexistence as carriers, their share in the world tanker fleet being only 4.5 percent. Developing countries own about 9.8 percent of world dry cargo tonnage, comprising 5.2 percent of ore and bulk-carrier tonnage, 14.1 percent of general cargo ships, and 5.9 percent of other ships.

Insofar as one can discern future trends, this imbalance between the developing countries' trade and their shipping is likely to become more acute in the next few years, and world shipping will continue to be dominated by the developed maritime countries. The share of developing countries in tonnage on order in 1970 was smaller (at 4.5 per-

cent) than their share in the existing world fleet. Furthermore, their fleets are characterized by a relatively high proportion of old ships which may soon have to be scrapped. It is true that in recent years the tonnage under the flags of the developed market-economy countries has suffered a relative decline. This was partly caused by the growth of the fleets of the socialist countries of Eastern Europe, which have been gradually increasing their share in world shipping. In addition the share of the main flags of convenience (which are those of developing countries, notably Liberia and Panama) increased from 15 to 17 percent in 1965-70. Since most of the tonnage under the flags of convenience is controlled by shipowners of a few traditional maritime countries, however, the decline in these countries' share of world shipping is more apparent than real.

Why should developing countries build their own fleets? Faced, on the one hand, with a large drain of their scarce foreign exchange from freight costs and, on the other, with a dangerously low capacity to provide the carriage of their foreign trade, a number of developing countries have given high priority to establishing and expanding their own merchant fleets. When their policy was discussed during the first UNCTAD, it was challenged on the grounds that the law of comparative advantage would hardly justify a high priority for the shipping industry in developing countries. Those who maintained this point of view were not unaware that their thesis presupposed a static economic structure. Their narrow economic agrument, if applied in general terms, would restrict the developing countries to the status of eternal producers of foodstuffs and raw materials and importers of industrial goods and services supplied by developed countries. However, today's world is far from static, and a dynamic analysis of the economic potential of developing countries may well lead to conclusions entirely different from those suggested by a static view of the present situation.

After a long discussion at the first UNCTAD of this and other aspects of the policy suggested by developing countries, a "Common Measure of Understanding on Shipping Questions" was adopted unanimously, though with certain reservations. This agreement "considered that the development of merchant marines in developing countries, as well as their participation in Liner Conferences as full members on equitable terms, is to be welcomed." It further stated that "the question of development of merchant marines by developing countries should be decided by such countries on the basis of sound economic criteria" (emphasis added). This qualification was accepted as a compromise by the developing countries, although it gave rise to serious misgivings. Brazil, for instance, was particularly critical of this restrictive phrase and the thinking behind it. Obviously no rational planner would consciously base decisions on unsound economic criteria! But the insistence on the obvious seemed to confirm fears that the expression might be used to denote mere commercial

profitability at the level of the enterprise. Interpreted in this restricted sense, it would encompass the establishment of a merchant marine in a developing country only as one industry among others, losing sight of the all-important implications of shipping for national security and the development of the national economy as a whole.

What leads developing countries to decide to develop their own fleets? There is no single answer to this question; each country has its own special characteristics that orient its decision-making process. In one of its studies, Esatablishment or Expansion of Merchant Marines in Developing Countries, the UNCTAD secretariat tried to list all the possible reasons that might induce or guide the developing countries in taking the important decision to develop a merchant marine, keeping in mind the limited development resources at their disposal. The reasons cited are:

a) Prevention of disruptions of services during hostilities. A country which primarily depends upon foreign shipping for its maritime trade faces the risk that its trade may be disrupted during hostilities. This consideration weighed heavily in the Brazilian decision. It falls within the area of national security, broadly defined. The strategic implications of maritime transport were felt fully when, during World War II, German submarines started to operate in the South Atlantic in an effort to disrupt the supply lines of the Allied powers. Shipping to and from Brazil, although escorted by naval convoys, was seriously affected. Even hostilities in which a country does not take part may expose its foreign trade to collapse by interrupting or restricting the international supply of shipping capacity. In such cases, the national merchant fleet should at least be able to keep the vital items of export and import moving.

b) Reduction of economic dependence. A country having no fleet of its own is entirely at the mercy of shipowners of other flags for the flow of its foreign trade. Commercial profitability is the primary consideration of an individual shipowner, and should services to a given country not prove profitable enough for various reasons, there is always the possibility that the services might be withdrawn, or provided in old or unsuitable vessels, or only at a very high price. By having its own merchant fleet, a country would minimize this ever-present risk to its foreign trade.

c) Influencing conference decisions. With its own merchant fleet, a country can claim the right to participate in liner conferences affecting its trade, thus acquiring a position to influence conference decisions. Brazilian planners, for example, placed great importance on this factor in arriving at their decision to establish a national merchant fleet and in formulating their country's shipping policy. It is worth noting, in this context, that liner conferences cannot operate in Brazilian trades unless Brazilian lines are full members.

d) Economic integration. In countries with a long coastline or with difficult internal communications, coastal shipping may be the only major link between the economies of two or more regions, as with the northeast region of Brazil. In such cases, a national merchant fleet becomes an essential element in the integration of the national economy. Coastal trade within a country is usually fully reserved to national shipping.

e) Promotion of exports. Although the argument as to whether trade or transport should come first remains open, some developing countries have used national flag ships, generally government-owned, to establish pioneering services to new markets to promote trade links. Brazil has established such services to Africa and around South America.

f) Diversification of employment. This consideration should be regarded in conjunction with the integration of shipping and shipbuilding facilities. The latter was not mentioned in the UNCTAD report, but has been given attention by some developing countries, Brazil in particular. The close linkage of the shipping and shipbuilding industries has a powerful cumulative effect throughout the economy and contributes to the expansion and diversification of employment opportunities.

g) Balance of payments. Developing countries attach great importance to the effects of shipping operations on their balance of payments because of the latter's influence on both the services item and on their visible trade, exports and imports alike.

From the viewpoint of the developing countries, all of the above considerations should enter into the definition of "sound economic criteria" referred to in the Common Measure of Understanding. Some of them, of course, do not constitute criteria of commercial profitability, but then, shipping is seldom considered by developing countries as just another industry. Economic planners may find shipping projects justifiable even when such projects do not meet purely commercial requirements, provided they are satisfied that they would be beneficial to the economic development of the country as a whole.

Access to Shipping Markets

But why should the shipping industry of developing countries not be viable in terms of purely commercial profitability? Developing countries are confronted with two sets of problems: a) the difficulties that new fleets, particularly at their infant stage, must overcome in order to be able to compete on equal terms with long-established fleets; and b) the barriers which the structure of international shipping, particularly in the liner conferences, imposes on the entry of newcomers.

Established fleets have certain very definite advantages over newcomers in the field. The former can draw upon traditional knowhow, count on a long-established commercial infrastructure, and benefit from economies of scale. This initial advantage of the traditional fleets tends to increase, rather than diminish, in a climate of unrestricted competition.

The liner conference system, which is dominated by the traditional maritime countries, regulates most of the import trades and a significant part of the export trades of the developing countries, and it works to the detriment of infant merchant marines of the latter. Technological development in the shipbuilding industry has also contributed to the predominance of the industrialized countries in the shipping trade and the latter's evolution into an oligopolistic system. The establishment of regular liner services in the colonial trades was made possible by the introduction of steam vessels. Regular shipping services soon expanded to the level at which the shipping capacity outgrew the demand for shipping space. Unbridled competition between shipowners brought about the first large-scale freight war, and in so doing, helped to bring about its own modification. The need to regulate trade and coordinate shipping capacity, as well as the tempting possibility of controlling maritime traffic for the benefit of the traditional carriers, gave birth to the freight conferences, one of the most sophisticated forms of oligopoly. The mechanism of incentives, financial advantages, and penalties that the liner conferences impose on shippers effectively restricts their freedom to choose non-conference vessels. The conferences admit non-traditional carriers, at most, to trade to and from their own countries. The big shipowners, who control the liner conferences, assure for themselves the lucrative cross-trades; and by curbing competition among themselves they allow the less efficient to stay in business.

Considering, on the one hand, the pressures exerted on the infant shipping industries of developing countries to abide by the lofty theory of free trade and, on the other hand, the tight control of trade by the liner conferences, it is easy to grasp the problem of access to world shipping markets that confronts the new fleets of these countries. Developing countries are often criticized for their tendency to engage in philosophical discussions and to reason in vague theoretical terms, rather than dealing with facts; in shipping, however, the inverse is more often true. Liner conferences were formed to restrict rather than to foster free competition. A major part of world maritime cargoes, including those of the developing countries, is carried by liner conference vessels, and the importance of these cargoes is even greater in terms of value than of volume. According to the Rochdale Committee of Great Britain:

> Broadly, a conference seeks to limit competition among its members on the trade or route to which it applies and also to

> frustrate competition from outsiders. Internal competition is restricted by agreements to fix freight rates and, in some instances, to allocate sailings, to share revenue pools and to run joint services. Some control of internal competition is fundamental to the existence of a conference. Conferences attempt to resist competition from outside in two main ways. Shippers are discouraged from using non-conference ships by the offer of deferred rebates or dual-rate contracts or both. In addition to these arrangements to secure the loyalty of shippers, many conferences admit new lines only on the vote of existing members. Admission may, therefore, be very difficult or even impossible in the case of some "closed" conferences.... We regard the fundamental question to be whether reliable scheduled liner services on deep sea routes, of a nature which shippers of mixed cargo require as an essential part of their trading activity, could be provided satisfactorily under conditions of unfettered competition. We concluded that they could not, except in special circumstances.

If free competition in liner conference trades is a myth, so is governmental non-intervention in shipping. There is no such thing as indifference between governments of developed countries and their national merchant fleets. The vast array of direct and indirect aid rendered by these governments to their national shipping includes operating subsidies, construction subsidies, investment grants, trade-in allowances, loans at very low interest rates, interest subsidies, credit guarantees, accelerated depreciations, tax-free reserve funds, and most recently, very sophisticated methods of freight financing. In greater or lesser degree, practically all of the maritime nations grant some form of assistance to their shipping. Even cargo reservation (governmental reservation of a defined portion of shipments to the national flag) is practiced by some developed countries. If this is so, then how can these countries object to the use by developing countries of the same measures of government assistance and protection for their own shipping industries, particularly in view of the infant stage of these industries?

The logical reply is to be found in a resolution on assistance to shipping adopted by the Committee on Shipping of UNCTAD in May 1970. This resolution, noting that developed countries assist or in some cases protect their shipping industries, recognized: "that developing countries have the same right to assist, to promote and to protect their merchant marines through the adoption of such measures as may bring them to a stage when they will be able to compete in the international freight market and have an increasing and substantial participation in the carriage of maritime cargoes, especially those generated by their own foreign trade." This resolution claims no more than is fair and equitable, yet nine out of fourteen developed

market-economy countries participating in the meeting voted against it—some of them maintaining that the word "protection" used in the resolution was only a euphemism for cargo reservation, a form of assistance unacceptable to them.

The question is often asked why developing countries, particularly those of Latin America, tend to favor cargo reservation rather than other, "less objectionable" forms of assistance to shipping. The answer is suggested by a cursory look at the list of possible measures of assistance given by the developed countries to their national shipping. Most of the measures are too costly for developing countries to undertake. Measures of a fiscal nature, such as subsidies or investment grants, would be a considerable burden to a developing country's budget. The cost of cargo reservation, on the other hand, is a "hidden" cost, which may at most take the form of less efficient service to shippers or overtonnaging of a route. The cost, if any, is probably borne by the traders of the country practicing reservation, but in the long run it would tend to disappear as the national fleet develops beyond the infant stage into the stage of commercial viability. Its effectiveness in creating a shipping industry is proved by the history of some of the world's greatest merchant fleets, e.g., in the "Cromwell Navigation Act" of 1651, abandoned by Britain only in 1849. Until very recently, Japan practiced both subsidies and cargo reservation, and other cases could be mentioned. The lesson to be drawn from historical and modern cases is that, as long as cargo reservation and other forms of assistance to shipping helped certain countries to build their fleets and to secure for them a good share of national and world cargoes, these measures were used to the extent necessary. Lest it be argued that it is fruitless to dwell on the errors of the past, one must also observe that the mechanism of liner conferences ensures, at the private level, a de facto cargo reservation for the shipping of the traditional maritime countries.

Developing Countries and the Conferences

The developing countries do not necessarily consider the liner conference system either good or bad. It is a fact; it exists, but it must be adapted to present conditions. The main question is whether competition should be restricted at the private level, by uncontrolled actions of the liner conferences, or at the government level, by the maritime authorities of the countries to and from which the conferences operate. Many developing countries feel that a certain measure of government control is desirable and necessary to ensure that their national interests are not harmed by the liner conferences' pursuit of their interests. Developing countries believe that shipping works very much like a public utility. They cannot accept that the freight component of the final price of their imports and exports should be left entirely to the discretion of private parties, most of whom are foreign. They

think that they are entitled to ensure that the freight rates they are charged for their imports and those which, applied to their exports, may determine whether or not such exports are competitive in international markets, really correspond to a reasonable remuneration for services rendered. This rationale is common to practically all developing countries.

The methods they actually apply to establish a measure of control on liner conference activities vary in form and scope. Some developing countries that have given high priority to shipping matters require that liner conferences be related more closely than before to their main streams of trade. The participation of the national flag lines of these countries in liner conferences serving their maritime trades is also considered essential. Furthermore, in some countries, liner conferences are required to abide by the regulations or legislation of the countries to or from which they operate. The regulations of some developing countries stipulate that conference agreements, as well as cargo and revenue pools and freight tariffs, are subject to the approval of national authorities. Thus, "closed" liner conferences are sometimes not accepted in the trades of developing countries.

In recent years the idea of international control of liner conferences has been aired by some developing countries. This idea, rejected without further consideration by the traditional maritime countries, has not yet taken root in UNCTAD, a forum which may be considered as impartial but not neutral as far as the claims and aspirations of developing countries are concerned. The point of view advanced by the developing countries was, however, fully supported in a study recently issued by the United Nations Department of Economic and Social Affairs. The study stated:

> If it is improper for companies within one country to enter into a joint agreement with others in the same field to establish and maintain prices, it is all the more improper for an international steamship group to do so. If it is a fact that governmental rate-making bodies provide an answer within any one nation, it would surely be proper and desirable for an international authority to take over the rate-making functions of steamship conferences. [That] the establishment and enforced application of a fair level of rates and tariffs would promote to the utmost the exchange of commodities between nations seems a self-evident proposition.

[Excerpted from "The Participation of Developing Countries in Shipping," International Conciliation. New York: the Carnegie Endowment for International Peace, No. 582, March 1971, pp. 27-43.]

Peru Modernizes Its Ports

Max Ebstein

[Small, obsolescent ports that have provided a meager living for many are being modernized or replaced by a few modern ones. Though initially creating some unemployment, the new ports will increase production and jobs in the valleys behind them.]

Along the west coast of Peru, 2,000 kilometers from north to south, is a strip of land—often sand—running between the sea and the high Andes mountains. Behind these peaks lies a largely unexploited tropical forest. From east to west, a series of fertile valleys run down across the coastal zone from the Andes to the Pacific. To provide outlets for the products of these valleys, a series of ports have been created over the years at suitable locations. For centuries internal trade was dependent on a busy coastal ship traffic, almost always back and forth through the Lima-Callao zone—the capital and its port that together make up the principal consumer nucleus. The layout of the railroad lines in Peru confirms this valley-port traffic characteristic.

The construction of the north-south Pan-American Highway at the end of the 1930s was an exciting innovation. It then became possible to transport merchandise to Lima without have to resort to the old, slow, and costly railroad to some small port, loading the cargo onto barges for transshipment to a larger boat, which in turn carried it to the port of Callao. The difficulty of constructing adequate land communications, however, still requires Peru to live with its face to the sea. Fishing, the source of the country's major export—fishmeal—is of course a seaside activity. Almost all import and

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export trade must go by sea; overland communications with the neighboring countries are limited and often difficult. To Chile there is only one good road, via Tacna; to Bolivia, the old railroad and the water route across Lake Titicaca; and to Ecuador, the road through Macara-La Tina. There is hardly any usable land communication with Brazil, or with Colombia, although it is hoped later to establish a land link with Colombia across the Putumayo zone. The Peruvian river port of Iquitos, the base for traffic on the Amazon and its tributaries, is not accessible by road from the coast.

The development of the country and the growth in its international trade require efficient ports along the coast. A program has been undertaken to abandon the numerous obsolete ports served by barges and to establish a few strategically situated ports—modern, mechanized, and with terminals having direct mooring facilities. At the same time, Callao, the country's chief port, has been improved, and specially equipped ports are being planned for fishing products. The World Bank has contributed $21,275,000 to this program. The National Port Authority of Peru (ENAPU) has estimated total investment to improve the port facilities of Peru in the last five years at $50,000,000. The new ports of Paita in the north and General San Martin in Puntapejerrey (Pisco) in the south, have already been constructed and were inaugurated July 1968 and April 1970, respectively. Those of Salaverry, Matarani, and Ilo have been modernized. Work is underway on Chimbote, and initial studies indicate that Eten offers the best possibilities for expansion in the northern area.

Impact of Modernization

Modernizing a port is not only an economic process, but a social one as well. Until now, the old ports have meant wages for workers loading or unloading boats at anchor in the middle of the bay, and transporting goods by barges to shaky docks with ancient cranes. The small daily wage was supplemented by fishing in the bay or near the shore. The small, obsolescent ports provided a meager living for

many. Modernized ports clearly bring great benefits, but there may be initial unemployment. The lightering barges have to be sold, and the port service requires fewer staff with better qualifications. The traffic within the bay must be regulated, and hence fishing is restricted. All of this is, at first, somewhat unsettling, and many workers, unable to adjust easily to the new circumstances, experience difficulties.

At Paita, 900 kilometers north of Lima, some of the displaced men and their families look dejectedly from their hillside homes at the magnificent new wharf and the smart modern ships of many nationalities as they unload fertilizer or timber and take on cotton and fish. In San Lorenzo, a three-hour car journey away, there are more fortunate people who have benefited from the port's modernization. Recently an expert arrived, analyzed the soils, and contracted with various farmers to cultivate a special type of melon on newly irrigated land in the San Lorenzo Project. With timber from a sawmill in the Andes, packing material from Lima, and with some pieces of canvas, a shed was improvised. During the harvest season many people receive a good daily wage for picking, sorting, and packing the melons. The boxes are transported to the modern warehouses in the port of Paita, where ships load about 5,000 boxes in a few hours and continue on their way to London, Hamburg, Stockholm, and other European ports. These first shipments are a good beginning. Prior to these new facilities in Paita, the melon trade through Callao to Europe was sporadic and yielded unsatisfactory results to both producer and consumer. Other promising trade is also developing from the new Paita port facilities: Paita is the natural outlet for the valleys of Piura and Chira and for an extensive area of the country.

The social impact of port modernization appears even greater in Pisco, 275 kilometers south of Lima. Its old wooden jetty, constructed in 1859, served an important agricultural and mining area and handled a considerable amount of traffic. But the loading and unloading of barges was a slow operation, often made more difficult by conditions at sea. Occasionally trade was diverted to Callao, with a resulting higher cost. The construction of a new port was a necessity, with the preferred site near Puntapejerrey, on the other side of the Bay of Paracas, 35 kilometers from the old port and city of Pisco. The project included the construction of an 18-kilometer access road; it involved dredging, construction of a 700-meter pier with a mooring capacity for four ships, cargo depots and warehouses, filling and leveling of the port area, and construction of service roads. All this cost about $14,700,000. A boat loading 1,000 tons of fishmeal at the old port by the barge system took two days; using the facilities of the new port, it now requires only seven hours. With the port construction and the building of a completely modern new town near the ocean terminal, it is anticipated that Pisco will have a new face and many people will have to adjust to unfamiliar conditions. A study is being made of

the trade that the port may generate, such as timber, thus bringing new employment and higher wages to other areas.

Callao is by far the most important port of Peru. In 1969, 4 million tons of cargo were handled in its terminal. This compares with 2.4 million tons handled in the port of Talara, almost exclusively petroleum, 1.5 million tons in the port of Chimbote, important for shipments of fishmeal; and in Pisco only 660,000 tons in all. Callao is the most extensive and complete port, and has been continually overhauled. The modernization of the port began in 1952 with the installation of new facilities for general handling of cargo, and the unloading and storage of grains. In 1958 a second project was initiated for the construction of a new pier with two wharves for handling petroleum products, a new wharf with mechanical equipment for loading ores, two general wharves, three new warehouses, and purchase of equipment. New administrative procedures have permitted faster loading, warehousing, and the entry and exit of merchandise. Shipments are now stored in depots nearer to the ship, so that cargo, which is conveyed on pallets, does not have far to travel.

The new Peruvian ports have an air of cleanliness and activity, of efficiency and rhythm. They have established a port-valley relationship which makes it possible to study the economic justification for building transport facilities across the Andes in order to exploit the untapped resources of the trans-Andean zone.

[Excerpted from "Peru Modernizes its Ports," Finance and Development. Washington (D.C.): International Monetary Fund and the International Bank for Reconstruction and Development, Vol. 8, No. 1, March 1971, pp. 28-36.]

CONSULTANTS

REPRESENTATIVES OF GHANA AND REPRESENTATIVES OF THE CONSULTING FIRM OF NATHAN ASSOCIATES DISCUSSING SECTORAL STUDY CONTRACTS IN AGRICULTURE, WATER AND TRANSPORTATION
[PHOTO: ROBERT R. NATHAN ASSOCIATES, INC.]

Improving the Consultant-Client Relationship

Jerome Jacobson

[An old hand in the consulting business suggests that clients, as well as consultants, need to do better. Too often the clients expect too much because they do not know quite what they want, or what is possible under the circumstances, and they may create or allow conditions which interfere with the success of the relationship.]

The development profession fails to provide guidelines to help assure that clients get the help they need and that consultants give the help they promise. Why is this? Perhaps it is the very breadth of consultants' activities and their role which may explain it. How can the subject of the effective use of consultants be tackled when there are untold numbers of them: the individual on his own; the large firm with many hands working abroad; others engaged in a wide variety of tasks and having many sponsors and clients; and those whose influence ranges from the narrow technical to the very broad and highly political. The very concept of consultancy is quite elastic, making compilation and analysis of numbers of consultants and descriptions of their responsibilities very difficult. How can the success or failure of consultants' efforts be systematically judged?

We do know that some very critical things are sometimes heard about them: they did a so-so or bad job; they are expensive; they demand too many perquisites; they say what the client wants to hear instead of what he should hear; they get their jobs by currying favor or through more nefarious means; they are opportunists—

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hiring staff ad hoc instead of relying upon an established cadre of permanent staff members; they are often imposed upon governments by aid donors as a condition for receiving capital aid; they are "fronts" for aid-giving countries, intended to recommend projects and procurement that will favor their suppliers; they force up local salaries by paying more than the going rate for well-trained nationals; and much more. There is some merit to each of these accusations. Consultants suffer human and professional foibles. Yet their use grows, and as development problems become more specialized and complex, as technical ability and experience become ever more important, the use of consultants will continue to grow.

Consulting efforts sometimes founder for reasons that could be avoided. Consultants and clients need to pay more attention to what needs doing and how it is to be done. The fact is that clients are often badly equipped to use consultants, and therefore the blame laid on consultants often arises from the clients' own shortcomings. Outlined below are a few problem areas as seen by an economic consulting firm with 25 years' experience in the developing countries. These could apply equally well to engineering firms.

The need for realistic scope of work. The scope of work is often too ambitiously and sometimes too vaguely stated. Taken on its face, one might believe that the achievement of an ambitious per capita growth in real income, miraculous improvements in bureaucratic efficiency, and business ink turning from red to black, hang almost wholly on the consultant's effort. More modesty in the demands laid down by the client will result in less puffery in the consultant's promises, and a good consultant will work to persuade the client towards a realistic statement. But in doing so, he may prejudice his chances of getting a contract. If the consultant hedges about the scope of work or seeks to alter it to make it realistic, he risks being declared unresponsive to the client's needs. This makes it all the more important that the contract provide for relevant modifications in terms of reference during the life of the contract.

Deficient scope often arises because the problems requiring study have not been sufficiently and precisely defined by the client, and the background information has not been inventoried. A study may be well along before the parties have a real meeting of minds as to what needs doing. By then the consultant has turned over old ground. He finds that much of the work assigned to him has been covered in earlier studies and that many sound recommendations therefrom have not been implemented. Can this be avoided? An inventorying of background materials, a description of past studies and of events thereafter, a detailing of past efforts and reasons for success or failure thereof—these will help the client and the consultant come to an understanding of what really needs doing.

Of course, the consultant can independently develop information before making his proposal, but in so doing he will incur substantial costs. Serious thought should be given by clients to financing pre-contract reconnaissance costs for a limited list of the most eligible competitors or, alternatively, to finance a post-contract reconnaissance to validate terms of reference. Should the client and consultant then not agree on them, the contract could be cancelled. These are not new ideas; they have been considered informally by such institutions as the International Bank for Reconstruction and Development (IBRD). The U. S. Agency for International Development (AID) has occasionally financed reconnaissance costs. More of this should be done.

In several countries where our firm has worked, our job has been to write up the scope of work for other consultants. We help our client be clear as to what he wants done; we try to write scopes that match the availability of data, time, and money for the study; and we ask that the consultant show an understanding of the task and lay out a methodology for it that matches the scope. A consultant on consultants is a worthy idea for governments to consider.

Relating policies to projects. Clients often want consultants to recommend the project or action that will result in quick international aid funds, i.e., prompt, precise recommendations for capital projects, loans to credit institutions, and technical assistance grants. Impatience is expressed when the consultants state that certain policies and strategies—taxes, price support and marketing policies, definition of the role of the private and public sectors, market pricing versus subsidies, development of managerial capability—are critical matters which must first be settled if development funds are to be wisely used. The consultant should try to anticipate whether broad policy matters are an inevitable part of the problem—whether a problem in wheat production involves pricing and marketing policies, not merely herbicides and seeds; whether the outcome of a road feasibility study hangs on a government decision on private versus public road transport and related pricing policies. Where these are likely issues they should appear in the scope of work and should not be omitted from the final report simply because they are sensitive issues.

Distinguishing among kinds of studies. Clients are often frustrated by overview reports so general in nature that they merely provide some facts to confirm prevailing impressions. Sometimes they merely lay the basis for another study. Clients want more than this; they want recommendations for specific policies and for projects ready to go. Quite possibly a more detailed feasibility study is needed, and even that will not get down to details of design, engineering, and processes sufficient to start construction. The client and the consultant had better be clear as to what the consultant is supposed to produce with what amount of effort. How far along the line from the framing of the

general idea to detailed design and engineering plans is the consultant to go? Must he provide a clear yes or no for a project? Is the client aware that the consultant may have to suggest that a still more detailed study is needed? It is essential that both parties agree beforehand on the depth of study.

The sector study bears particular mention because it is a relatively prominent newcomer on the scene. It is much more than an overview. It is the most comprehensive of all studies for a major segment of the economy, intended to wrap policies and projects, strategies and tactics, all into one for a considerable future period. It is supposed to identify all closely related policies and projects so that each can proceed in the proper priority, and so that the policies, programs and projects of a particular sector are made consistent with the overall national economic and social objectives. For projects that appear to offer the best contributions to growth, measures of economic worth, such as benefit/cost ratios or internal rates of return, should be calculated. Where they are based on only very approximate data, feasibility studies may be called for. Sector studies can be costly and can arouse great expectations. Clients should be very clear just how far they are to go—through the detailed feasibility stage?—lest there be a letdown because the study does not provide the detailed justification sufficient to cause aid and investments to flow immediately.

Freedom of opinion for the consultants. The usefulness of the consultant's findings and recommendations is critically dependent on his freedom. He must be allowed to weigh alternatives and to consider objectively all aspects of his assignment. He must be free of compromising ties and have no conflicts of interest. His judgments should not be colored by the desire to see a contract renewed or to get another one. AID, the IBRD, and others often rule out a consultant undertaking a role in a project or study which the consultant has himself recommended. This rule is proper in principle, but it must be enforced with tolerance; after all, no one knows more about the project than the consultant and it may be unwise to let his expertise be passed over. Exceptions to the rule may be in order, but they should be sparingly invoked.

Length of consultant's services. Very often there is an unfortunate interruption in the consultant's services. He may recommend prompt action—a policy decision, an investment, a detailed feasibility study, or assistance in a management problem—but the client is not prepared to act. The consultant's team disappears; the consultant's report gathers dust; the facts upon which the recommendations were based become stale. When interest renews, the study process has to start virtually afresh. Clients need to anticipate what their consultants might tell them so as to be in a position to act on it. Contracts calling for several phases of work by consultants are sometimes useful; ap-

proval of the results of the first phase would lead automatically to the undertaking of the next.

Client supervision. Once hired, consultants are often left on their own; direction by the client and participation by counterparts are nominal. Consultants must spend excessive time acquiring data better gathered by local counterparts. Perversely, cooperation is sometimes denied precisely because officials fear what the consultants are supposed to do—to recommend a change in policy, management, staffing, organization, or other matters likely to affect them. Clients should let it be known where it counts just what the consultants are to do, and should arrange for the necessary cooperation with them. The client must be an active sponsor of the consultant with each concerned party.

Counterparts. Consultants require effective counterparts, but, unfortunately, developing countries generally have too few people who can fill this role. Skilled individuals are likely to be so heavily burdened in their government jobs that they are unable to devote more than a token amount of time to a counterpart assignment. Junior staff frequently designated as counterparts are likely to be trainees, lacking the skill and authority to provide the information and policy guidance needed by the consultants. Training and counterpart assistance are sometimes confused by the client; they are not the same thing.

High level support. When clients want high policy advice, they had better give high policy guidance. Consultants working on matters of high national importance—5-year development plans, major capital investments, sector studies, advice on fiscal, monetary, and balance-of-payments matters—become more than technicians. Implicitly, they become policy shapers and their work takes on a political hue. It is no use for them to recommend an increase in the income tax if the Cabinet will not support it. They need the opportunity to present their views to the high policy-makers on technical grounds, and to have them resolved in the light of their merits and political realities, but the limits of political reality must be made clear to the consultants.

Who is the client? Occasionally, clients hire consultants under duress. A potential donor may insist on a consultant's services in support of a request for assistance or as a part of the aid itself. The consultant is in an awkward position if the client hires him only because someone else wants him there. Consultants may also be financed by one organization (AID, United Nations Development Program, IBRD) to work for another (the client government). It is important that the consultant have but one boss and be clear as to who it is. Where confidence and confidentiality are involved, there must be no split loyalties. If an aid donor is financing consultant assistance to a government, the consultant's loyalty must be to the government, not to the donor. If the consultant's report is to be made to the aid donor, there

must be agreement with the country concerned on the extent of cooperation and assistance needed by the consultant. Moreover, there had better be understanding between donor and country on the standing of the consultant's recommendations. Is either free to reject them or are they to be like a referee's decision, binding on the parties? The consultant can become uncomfortably caught when his report finds favor with, say, the potential donor but is out of favor with the client government—particularly when the latter has paid for the report at the donor's prompting.

This issue of who is boss must be clear within the client government too. A planning agency may contract for a study that embraces several sectors, say, agriculture, transport and water. What it thinks about policies in these sectors may conflict with what the concerned sectoral agencies believe. As a result, the consultant does not get the cooperation of these agencies. Some ground rules, agreed assumptions, and effective collaboration between the respective government agencies are needed if the consultant is to receive necessary help and if his reports are to be reviewed objectively.

Consultant personnel. This is a subject to which clients have become very sensitive by now. Some consultant firms are little more than employment offices; they get the job and then recruit the men. In justice, let us add that few firms can fill every overseas job wholly from permanent staff, for they would have to be excessively large to handle peak loads and every special requirement. It is sound practice, however, that core men, those upon whom the main burden of the consultancy will fall, should be of the firm, have worked with it, and have good records. Biographic material on personnel proposed for a contract should include references from those with whom consultant personnel have worked and suggested contacts to permit the client to make further inquiries.

Administrative support. The consultant is usually promised all local logistic support including secretaries, translators, housing, transport, expeditious customs clearance, etc., but often it is forthcoming only with grave delay or not at all. Consultants should send their administrative officers ahead to check on logistic support and if it is not available should delay the start of the work. Alternatively, consultants should include the full costs of logistic support in their budgets, relieving the client of this responsibility.

Competition among consultants. Frequently, too many firms are invited or are free to offer their services. It is not uncommon to find 20 or 30 offerors where the competition is wide open. Each goes through the costly effort of preparing a proposal. Our firm finds that preparing a proposal requiring substantial background information involves an outlay of at least $5,000, so that 15 or 20 of us may well spend $75,000 for contracts that may run to $100,000 or $200,000. In

such cases it is highly doubtful that we will bid unless we feel that the selection committee will certainly include us as one of the two or three likely choices. Excessive competition thus drives away many good firms, leaving many of questionable worth in the competition. Competition also drives up costs; the overheads of preparing proposals must be recovered somehow.

Clients should consider a so-called prequalification system in which firms submit a general statement of qualifications that involves much less work than a proposal. A limited list of competitors is then selected to submit detailed proposals. Several international agencies use the so-called short list of prequalified bidders; only five or six firms are invited to bid, and each is bound to take the invitation more seriously than if 20 or 30 are bidding.

Cost. The client should judge the quality of the consultant's proposal before he looks at the price. The client who selects a consultant principally because he is lowest in price gets, at best, only what he pays for. Price should enter into the choice between two proposals that are substantially equal but should have no influence on the choice to begin with.

A growing tendency in pricing has merit. The client indicates the approximate sum of money available for consulting services and the number of man-months of services he requires. Consultants can then be judged on the basis of what they offer for the stated amount of money or time. Without such guidelines, great variations appear in offers, making cost comparisons meaningless. However, even this arrangement has its limitations because salary-overhead costs differ from firm to firm and from country to country. The best standard is to specify the number of man-months with a precise statement of the qualifications for each position. This presumes, of course, that the client can sensibly frame the scope of work, describe the positions to be filled, and estimate the time required. As noted before, many clients do not do this very well.

Finally, clients and consultants need to give greater care to their relationship: the clients to know what they want, and the consultants to understand the needed task and to be equipped to do it. There is no novelty in the exhortation for consultants to do better, but there may be something new in the idea that clients have to do so too.

[Excerpted from "Pitfalls for Consultants and their Clients in Developing Countries," International Development Review. Washington (D.C.): the Society for International Development, Vol. XIII, No. 2, 1971, pp. 2-7.]

Consultant-Client Problems in Africa

Michael J. Chaput

[International consulting firms in Africa too often fail to meet the needs of their African clients. Sometimes this results from differences in attitudes, sometimes from the technical orientation or vested interests of the consultants.]

There are large differences in the orientation, size, scope, work methods and financial backing of consultant organizations. They can be divided into four categories: Generalist consultants accept projects in almost any economic, organizational or manpower sphere. They emphasize their open-ended approach as a positive factor in researching new projects and entertaining new ideas. Specialist consultants usually limit themselves either to a particular sector of a specific industry, such as food processing, or to one area of expertise within several industries, such as cost accounting or marketing. Industry-based consultants are associated with a specific private organization, for example a team of experts from a transport company, a chemical firm or a machinery producer. Often they are invited as consultants with the understanding that machinery or raw materials from their company will be used in the host country. While this may appear as a problem to some observers, the industry-based group is among the most widely employed in Africa. United Nations consultants and experts from related organizations are common throughout independent Africa. UN teams are inexpensive to the host country, they usually have good credentials and are locally regarded as politically unaligned.

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In Africa, national governments and their ministries are the most frequent clients of consultants. These governments view development as a national effort to improve political, economic and social conditions. They expect strict adherence to their policies regarding wages, Africanization, protection of infant industries, trade and balance of payments. International consultants seldom share client attitudes toward development but remain steeped in applied business principles oriented toward efficiency and profitability. Consultants appear frequently to hold the view that development is a linear progression toward economic ends measured in monetary units.

A major problem fostered by this attitude is that political, social, institutional and human aspects of development are placed second to profits. In one instance, a consultant studying the timber industry suggested a new line of products which could be marketed in South Africa where demand and prices were high. That the host government refused to expand trade with South Africa was given no consideration. Often difficulties arise over personnel policies, or excessive import requirements. Those consultants who have a genuine understanding of the African environment are the most successful at bridging these opposing development attitudes.

Salesmanship. Regardless of their professional status, consultants are concerned with marketing their products, which are mainly ideas, but which may also include manufactured goods and raw materials. Promotional writing employing the latest behavioral and environmental vocabularies often obscure the consultant's desired message. In many countries this complicates communications already suffering from lack of clarity and precision.

African government ministries may interview a dozen consultants in a single month. The consultant's representative typically asks the client what his problems are and what projects the consultant's firm might undertake. It is much better, however, if the consultant has researched problem areas before seeking an interview. This approach breeds a consultant-client rapport and acts as a platform for meaningful contract negotiations. Few clients will elaborate on problematical matters within their ministries to a foreigner who does not appear knowledgeable, although they will usually be keenly interested in a consultant's appraisal of specific problems.

Manpower and organization consultants are inclined to underestimate the uniqueness of African personnel organization and recruitment. Consultants will insist upon modern management systems without regard for local priorities, such as Africanization and manpower training programs. The decentralization of responsibility and participatory decision-making processes, for example, are difficult to implement and largely ineffectual in countries where replacing expatriates with local, inexperienced manpower is a primary political and social objective.

Technology. International consultants are highly qualified technical specialists. African development, however, is not characterized by its technical complexities. Consultants are often overqualified, and employment of highly qualified experts is, in this instance, a costly waste of manpower. Moreover, they tend to interpret development problems on the basis of their own technical orientations. Specialization on the part of consultants offers new nations the benefits of advanced research and technology, but a major disadvantage of specialization is its dependence on the latest machinery, equipment and organizational methods.

Two examples illustrate this point. In one instance, a specialist consultant recommended a newly developed processing plant for a rural factory. A well-documented report was submitted to the client comparing the advantages of this plant over conventional machinery. One point the consultant failed to consider, or to report, was that the machinery is designed to operate with a minimum of manpower. In Africa, where manpower is cheap, this may not be a primary consideration. Moreover, advanced machinery is difficult to transport and to maintain in rural areas. Sources of electric power are undependable, fuel costs are high, and qualified mechanics must inevitably be flown in from Europe in the event of a breakdown. In another case, a consultant studying beef production recommended scientific methods of farming, butchering and marketing. These methods were largely extraneous to the immediate problem of stimulating beef production and consumption.

Client staff relations. When the consultant obtains a contract there is a new set of pitfalls awaiting him in the area of interpersonal relations. During the initial stage of project analysis, consultants often do not penetrate below the first levels of client managerial staff, losing an opportunity to discuss project problems with middle-level personnel. The consultant who ignores this stratum often misses those people who are most conversant with relevant issues.

Another problem arises from the attitudinal differences of local and expatriate client personnel. Exclusive attention to either of these two parties results in client staff hostilities, which are inevitably manifest in racial terms. Client expatriate staff, like consultants, feel that there is no substitute for skilled technical and administrative personnel, like themselves. Local staff, on the other hand, feel that every effort should be made to recruit and train Africans to rapidly fill administrative ranks. This attitudinal bond between expatriate staff and consultants contributes to client staff problems and lowers local esteem for the consultant.

Consultants' reports. Consultants should give meticulous attention to documentary details in their reports. Client staff may not realize

errors in technical information, but they will notice spelling, grammar, etc. The consultant might bear in mind that client staff reading his reports are often motivated to locate discrepancies and thereby enhance their own standing. In one instance, a consultant's document was seriously jeopardized simply because maps included in the report were reproduced from pre-independence maps containing colonial names for cities and the country itself.

Statistical resources in African countries are at best a fair indication of reality. This fact is readily acknowledged by client staff who are themselves critical of official statistical data. Yet consultants often use such data in their reports because they are easily obtained, inexpensive and time saving.

Receipt of the final project report is a long anticipated event. Once in the client's hands the report is carefully read by staff members who are interested in its recommendations. A major fault of these reports is that specific recommendations are obscured by lengthy documentation of geography, economy, climate, infrastructure, the problem and previous solutions. Most such information is commonly known and largely irrelevant, and the impression is given that the consultant is merely filling space.

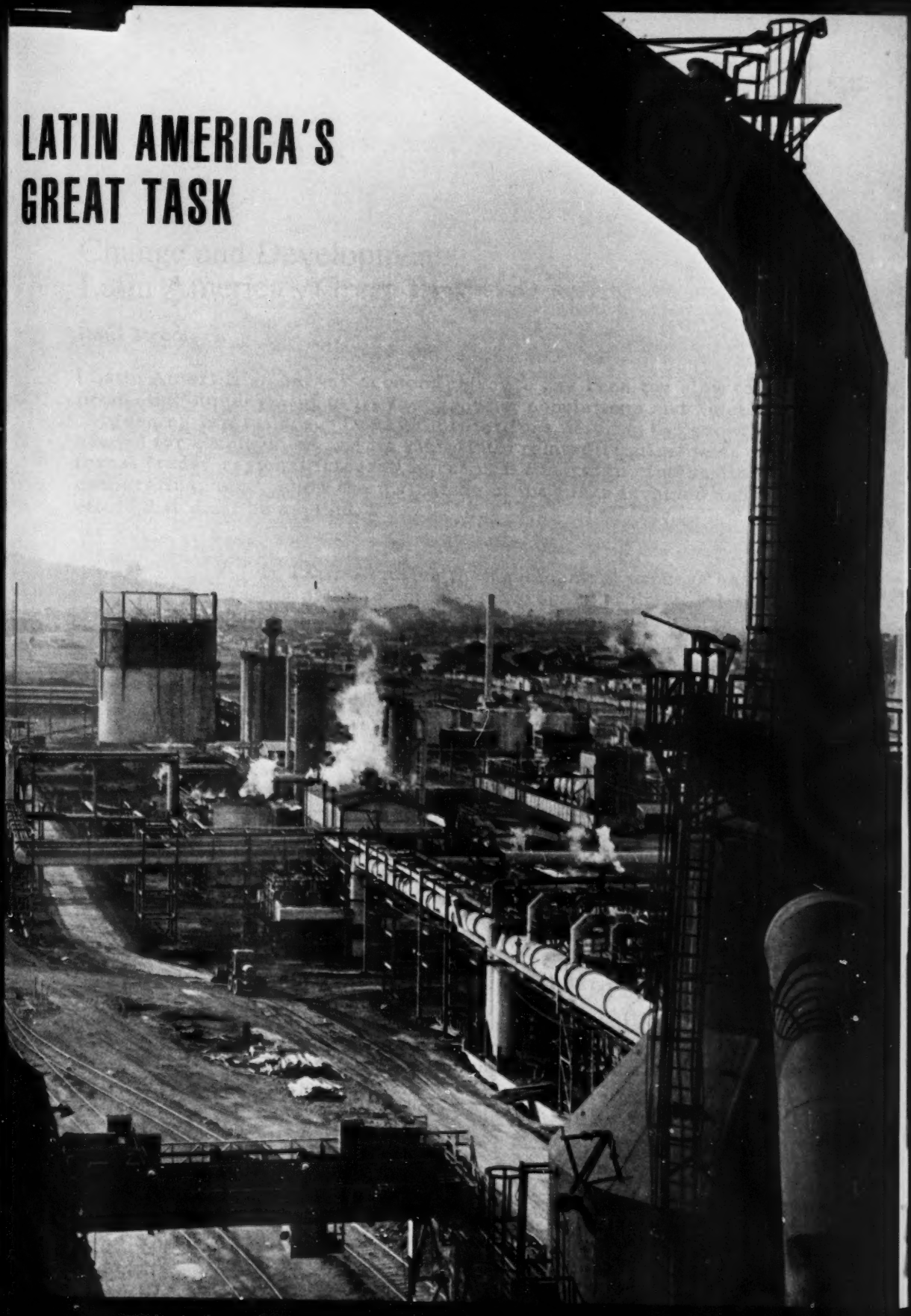
Vested interests. Industry-based consultants are widely employed in Africa. They are recognized experts in their own industry and are often called upon to study problems related to their own experience. Not uncommonly, such consultants retain vested interests in the success of a project owing to agreements that machinery or raw materials produced by the consultant will be purchased for use in the host country. This linkage, however, may tend to breed overoptimism regarding the potential of a project. In one instance, the viability of a corn oil processing industry was studied by a consultant connected with machinery suppliers in his home country. By projecting government statistics on past corn yields, the consultant reported that such an industry would be viable. However, weather conditions in the host country had adversely affected corn production during the period between the inception of the study and presentation of the final report. At the same time farmers had begun planting crops other than corn to capitalize on high prices being paid for scarce crops, avoiding the lower prices being paid for corn as a result of past surpluses. As a result, the entire basis for construction of a corn oil plant had collapsed.

Consultants who have vested interests, who are overoptimistic about their projects, deposit problems back into the lap of the client. Few clients would regard unfavorably the consultant who, after demonstrating a thorough knowledge of the project, recommends that it be postponed. Armed with this sort of recommendation, the client from a technical department can then go to his senior political officals and explain the difficulties involved.

Contract followthrough. Consultants are hired on a contractual basis for a specified time period and most consultants assume that their responsibilities end with the termination of their contract. This results in two problems: first, by not taking a long range view, consultants fail to create project support among client personnel, and second, post-contract communications with the client are seldom maintained. The creation of project support involves soliciting client opinions, having a warm approach to public relations, and a positive attitude toward project implementation. Often client opinions are not solicited, breeding alienation among those responsible for project implementation. Consultant staff may, in effect, contradict recommendations in their final report by voicing a negative attitude toward development problems. Post-contract communications between client and consultant are too often concerned only with clarification of minor items and payment of consultancy fees. There is seldom any consultant interest in how a project is progressing or what problems are being encountered.

[Excerpted from "Consultant-Client Problems in Africa," International Development Review. Washington (D.C.): the Society for International Development, Vol. XIII, No. 1, 1971, pp. 23-25.]

LATIN AMERICA'S GREAT TASK



HUACHIPATO STEEL MILL IN CONCEPCION, CHILE
[PHOTO: U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT]

Change and Development: Latin America's Great Task

Raúl Prebisch

[Latin America's postwar economic growth has been too slow to give productive employment to its fast growing populations and meet their burgeoning aspirations. Detailed projections defining the growth rate needed for employment and its many interrelated requirements in external trade, regional integration, capital formation, international cooperation, etc., show the magnitude of the tasks involved and the effort that must be applied.]

In Latin America the development process has been taking place in complete disregard of the population explosion. Only a part of the economically active population is productively absorbed. A very high proportion constitutes redundant manpower in the rural areas, and the migrants from the rural areas who ceaselessly pour into the bigger towns merely shift the scene of their redundancy. In their new environment, they needlessly swell the motley ranks of the services sector, in which a substantial proportion of the natural increase in the urban labor force itself is also skirmishing for jobs. The result is a spurious rather than a genuine absorption of manpower, if not unemployment pure and simple. This phenomenon reflects the Latin American economy's lack of the required degree of dynamism. Its rate of development has been too slow to meet the peremptory demands deriving from the population explosion, and a large amount of human potential is wasted in one way or another, to the detriment of economic growth, equitable income distribution, and social harmony.

The extraordinary rise in the population growth rate is a relatively recent phenomenon in Latin America and—except in the lengthy period of mass immigration

Another part of Dr. Prebisch's report is extracted on pp. 38-50.

into the United States—is something that did not occur to the same extent during the development of what are now the industrialized countries. The rate began to rise at the end of the 1930s and gathered appreciable momentum as scientific and technological progress gradually lowered the death rate without there being a parallel decline in the birth rate. During the last five years of the 1930s the demographic growth rate was 1.9 percent, i.e., the population doubled every 37 years. Now, at the beginning of the 1970s, the rate has risen to 2.9 percent, which means that the population doubles every 25 years. These are average figures only; some countries, such as Mexico, have annual demographic growth rates of more than 3.4 percent; while Argentina and Uruguay are at the other end of the scale with rates of 1.5 and 1.2 percent, respectively.

The serious consequences of this phenomenon have caused controversy and debate. The population explosion made itself felt some time ago (1935-40) when the number of dependents per income earner began to rise, and it affected both household and public spending, inasmuch as an ever-increasing amount of social investment was required to cover housing, health and education needs. These still have been met only partly. However, it was only later, in the 1950s and 1960s, that its effects on the labor force and the difficulty of absorbing labor into productive employment were steadily aggravated, until now they have come to constitute a basic obstacle to Latin American development.

Distortion in the structure of the labor force. As always in the course of development, irrespective of the economic and social system, agriculture lacks the capacity to retain the whole of the natural increment in the agricultural labor force. Before the 1930s approximately 63 percent of Latin America's total labor force was engaged in agriculture. At present, the corresponding estimate is 41 percent, with wide variations between countries. This annual rate of decline in agriculture's share in the total labor force has been just slightly slower than the corresponding percentage change in countries such as the United States and Sweden at an earlier period, though faster than in Italy and France. The difference between the European and Latin American experience lies in what happened to the non-agricultural labor force.

If we look at this situation in terms of growth rates, the agricultural labor force grew at an average annual rate of only 1.5 percent during the period 1950-65, while the comparable figure for the total labor force was 2.6 percent. The average annual rate of increase in the non-agricultural labor force, including the unemployed, was 3.5 percent between 1950 and 1965. How has this increment been distributed? Here we come to the important point, for a real distortion has occurred. Given Latin America's current stage of development, employment should increase more rapidly in industry, construction and mining (we shall call this the industry group) than in services. But this has not

happened, except in Mexico where the proportion of the non-agricultural labor force employed in the industry group has risen, and in Argentina where it has remained constant at a relatively high level. For Latin America as a whole, annual growth in the industry group was 2.8 percent and in services 3.8 percent. The proportion of the non-agricultural labor force in the industry group has fallen from 35 percent in 1950 to 31.8 percent in 1965, and slightly less than 30 percent at present according to estimates for 1970, while the proportion in services has risen correspondingly.

The term services covers a wide variety of activities, which comprise principally energy, transport and other basic services, commerce and finance, public administration and skilled personal services that require some degree of technical training. The proportion of the labor force employed in services normally tends to grow as development proceeds, judging from what has happened in the industrialized countries. The distortion lies in the scale on which this has occurred in Latin America; the ranks of those employed in such activities have been greatly swollen by redundant manpower that could be eliminated without any loss in efficiency. Public administration and public utilities, for example, typically employ more staff than they should. Redundancy, of course, is not confined to the normally labor-absorbing activities in the range of services; it occurs chiefly in those activities which in the normal course of development should be labor-expelling, and which comprise a variety of personal services that require little or no technical skill, together with such activities as street vending. These activities are usually irregular, intermittent, and very poorly paid. Those engaged in them are for the most part the marginal population in the strict sense, namely people who have broken their links with rural life but have not yet managed to become an integral part of the ordinary life of the cities. They eke out an impoverished existence, in ever-increasing numbers, in the shanty towns characteristic of the large urban agglomerations in Latin America. Redundancy does not necessarily mean unemployment, although the unemployed are growing, especially in certain countries. Since there are no reliable data, the unemployed have been included here under the catchall head of services; it is roughly estimated that the proportion of unemployed in the services sector has risen from 21 percent in 1950 to 24 percent at present.

If the year when 42 percent of the labor force was engaged in agriculture is taken as a basis of comparison, there is a marked contrast between the 30 percent of the non-agricultural labor force employed in the industry group in Latin America and the corresponding proportions in other countries: e.g., United States 48; Sweden 60; Italy 52; France 57 percent. Technology has played a part here. Generally speaking, the capital goods used by Latin American industry are imported from or similar to those now used in the highly-developed countries, and are much more labor-saving than were those used in the

United States and other industrialized countries at the end of the 19th and the beginning of the 20th centuries.

It is of interest to compare Mexico, the only Latin American country where the share of the industry group in the non-agricultural work force increased, with Brazil. Both have had vigorous growth rates in gross domestic product (GDP) and in population (unlike Argentina, where industrialization came earlier but postwar GDP and population grew slowly). Brazil's total labor force has grown slightly more slowly than Mexico's. Since Mexico has retained a higher proportion of its manpower in agriculture than Brazil, the pressure on its non-agricultural activities to absorb labor has been less. Yet Brazil has not managed to increase the share of the industry group in the labor force at anything like the same rate as Mexico. The reason for this very sizable difference is not because the dynamic impetus of the industry group has been weaker in Brazil than in Mexico; in Brazil the gross product of the industry group increased between 1950-65 at an average annual rate of 6.7 percent, more rapidly than in Mexico where the corresponding rate was 6.3 percent. This was mainly the result of the spectacular rise in the product per worker in the industry group by an average of 4.7 percent annually—an extraordinarily high figure for Latin America—compared with Mexico's more modest 2.5 percent. This difference in the growth of productivity per worker in Brazil and Mexico may largely explain why Brazil's industry group has not had the same capacity to absorb labor as Mexico's. While it is true that Brazil's average growth rate in GDP (6 percent) was slightly less than Mexico's (6.3 percent), this relatively small difference is not enough to account for such a big disparity in the growth rates of labor in the industry group. Given the rapidity of the increase in the product per worker in its industry group, Brazil would have needed a considerably higher overall growth rate than Mexico's in order to ensure that the proportion of labor in the industry group did not fall. But since this was not the case, the redundant manpower leaving agriculture in Brazil for the most part simply transferred its redundancy to the service sector.

Absorption of labor in industry. Industry has not successfully fulfilled its labor-absorbing function because of the inadequate pace at which the economy as a whole has developed, and also because of internal difficulties. A distinction must be drawn here between factory-type and artisan-type industry. Taking the average for the region, employment in factory-type industry increased at 3.6 percent a year in 1950-65, a more rapid pace than the total labor force. However, since employment in artisan-type industry grew by barely 1.9 percent, the rate at which labor was absorbed into industry as a whole was only 2.8 percent, i.e., almost the same as the rate at which the total labor force expanded. The proportion of industrial labor engaged in artisan-type activities fell from 51 percent in 1950 to 45 percent in 1965. This did much to raise the average product per worker in industry, which

is estimated to be ten times higher in factory-type than in artisan-type industry. Hence, a substantial part of the average annual rise of 3.1 percent in the industrial product per worker resulted from this transfer.

Manufacturing industry in Latin America could have appreciably improved its productivity if it had been able to overcome all the obstacles in its way, and the average annual increase of 3.1 percent might have been much bigger. Two factors stand in the way: the small size of the markets and the weakness of competition. The significance of market size varies with each country: in the countries which have achieved most in terms of industrial development, the market is of adequate size for a large number of industries producing consumer goods, but not for many of the intermediate and capital goods. The smaller the country, the more severely will the size of its market affect its industries, including those producing consumer goods. Even where the domestic market might be large enough, the lack of external competition discourages efforts to increase productivity, just as the prevailing land tenure system discourages improvements in land use. Capital is not turned to good account in industry: generally there is a great deal of idle capacity, and not enough is done to promote workers' efficiency. Nor are there any strong incentives to improve technical skills.

It is recognized that protection is usually carried to excess in the Latin American countries. To be sure, it has helped to build up a measure of managerial skill and to develop industries which would have been hardly likely to spring up on their own, but this initial phase has already been virtually completed in many countries. Experts are calling for a gradual decrease in the protection afforded to industry in order to introduce the stimulus of competition, but no powerful forces are supporting measures of this kind. Entrepreneurs, salaried employees and wage-earners all seem to have tacitly agreed to maintain an excessively high level of protection. This is a very serious matter, since industrial costs are much too high, and if the position remains unchanged it will be difficult to export manufactures.

Although its costs are too high, the import substitution process has generally led to a net increase in real income. This has been possible because redundant labor in agriculture and in other sectors with low productivity has been transferred to the import substitution industries. The result has generally been a sizable increase in the real income generated by industrial development. However, as the import substitution process gradually moves into capital-intensive industries which entail highly complex techniques and absorb less labor, or into those which come up against the barrier of a small market, the favorable effects of industrial development decrease, and the rate of absorption of manpower slackens. And if this goes hand in hand with excessively high costs in import-saving industries, it is easy to understand why the

net increment in real income drops appreciably or may even turn into a negative figure.

External Factors Hampering Growth Rates

In our view, the new type of development needed in Latin America cannot be based solely on import substitution, but must entail a major effort to promote exports and, in particular, intra-regional exports. In all countries, albeit in varying degrees, the relatively slow growth of exports has been an obstruction to more rapid development, since exports form the major component of the capacity to import. The barrier has not been insuperable, since it has been overcome by curbing the growth of imports. Each country has availed itself of its opportunities to export and/or to reduce its import coefficient (i.e., imports as a percentage of GDP) in a different way. The picture is very complex; Latin American countries have been able to exert an influence on some of the factors involved, using the means available to them; but they have not been able to influence others, which depend for the most part on decisions beyond their control.

For Latin America as a whole, the purchasing power of exports rose at an average annual rate of 2.7 percent over the period 1950-68. The terms-of-trade effect fluctuated continually throughout the period, but on balance it was clearly unfavorable. Thus, while the volume of exports expanded annually by some 4.5 percent, the purchasing power of exports grew at a rate of only 2.7 percent. Capacity to import increased at a rate of 3.2 percent if the net inflow of external financial resources is taken into account. However, over this period the gross product grew at an average annual rate of 5.2 percent, 2 percent more than the external resources available for imports. National efforts to reduce the import coefficient made it possible to overcome the limitation on developmental growth set by this moderate growth rate of external resources.

As the overall figures mask very different situations, the countries have been divided into the two main groups appearing in Table 1, according to the movement of their import coefficient, which has such an important bearing on the tempo of development. The first group includes those countries in which the import coefficient decreased: Argentina, Brazil, Colombia, Mexico, Uruguay and Venezuela, accounting for 83.5 percent of the region's product and 78.2 percent of its population. The second group comprises the remaining Latin American countries and in most of them the import coefficient increased. As a general rule, imports in Latin America tend to grow more rapidly than the product, i.e., the import coefficient tends to rise—as in group two. If external resources are not sufficient to permit imports to expand at such a pace, one of two things happens: either the product increases more slowly, or the import coefficient is reduced so that the product

Table 1: Latin America: Cumulative Average Annual Growth Rates in the Gross Domestic Product, and in Components of External Resources, 1950-68

(Percentages)

	Gross Domestic Product	Exports		Effects of Net Inflow of Capital	Total External Resources[a]	GDP Growth Minus Import Growth
		Volume	Purchasing Power			
1. Latin America	5.2	4.5	2.7	0.5	3.2	2.0
2. Countries in which the import coefficient decreased	5.4	4.1	1.8	0.2	2.0	3.3
Argentina	3.1	3.8	2.9	-0.9	2.0	1.2
Brazil	6.1	3.2	0.9	0.2	1.1	5.0
Colombia	4.7	3.5	1.3	1.1	2.4	2.3
Mexico	6.3	4.4	3.3	0.9	4.2	2.2
Uruguay	1.2	---[b]	-0.8	-0.5	-1.3	2.5
Venezuela	6.3	5.6	1.5	0	1.5	4.8
3. Countries in which the import coefficient did not decrease	4.6	5.7	5.4	1.3	6.7	-2.1
Bolivia	2.0	0.3	3.7	1.5	5.2	-3.1
Chile	4.2	3.5	4.8	1.2	6.0	-1.8
Costa Rica	6.7	6.5	4.5	3.0	7.5	-0.8
Dominican Republic	4.5	3.4	2.7	3.3	6.0	-1.5
Ecuador	4.7	6.1	4.1	2.2	6.3	-1.7
El Salvador	5.6	7.4	5.5	2.1	7.6	-2.0
Guatemala	4.5	8.2	5.2	1.0	6.2	-1.7
Honduras	4.1	5.0	4.5	2.2	6.7	-2.6
Nicaragua	6.0	8.7	8.5	2.1	10.6	-4.7
Panama	6.4	6.9	6.3	0.8	7.1	-0.7
Paraguay	3.5	3.9	2.2	2.7	4.9	-1.4
Peru	5.6	8.1	8.0	-0.4	7.6	-1.9

SOURCE: ECLA, on the basis of official statistics.

a/ Equivalent to actual imports.

b/ Negligible.

can grow at the same rate or faster. Much of the reduction in the first group of countries was effected through the replacement of imports by domestic production of the same goods; in other cases, however, certain imports were restricted or banned and demand was diverted towards other domestic goods and services. This is also substitution, but of a different kind.

The disparities between the two groups are really significant. In the first group, the index for the gross product rises increasingly far above the index for external resources, while the reverse is true for the second group; the product falls farther and farther below external resources. In the first group of countries the product increased at an annual rate of some 5.4 percent, while external resources grew by barely 2 percent. In contrast, the external resources of the second group expanded by 6.7 percent yearly—clearly a relatively high rate—while their product rose by barely 4.6 percent.

There are other contrasts between the two groups; the components of external resources also behaved very differently. For example, in the first group the deterioration in the terms of trade had a very serious effect: while the volume of exports rose at an annual rate of 4.1 percent, their purchasing power increased at a rate of only 1.8 percent. In the second group of countries too the terms-of-trade effect was unfavorable, but to a far lesser extent: the volume of exports grew at an annual rate of 5.7 percent and their purchasing power at a rate of 5.4 percent. In the second group, the trends of financial resources were also more favorable. In the first group, if the net inflow of external financial resources is added to the purchasing power of exports—which rose by 1.8 percent—, total external resources will be seen to have expanded at a rate of barely 2 percent. In the second group, on the other hand, total external resources increased at a rate of 6.7 percent, i.e., more rapidly than the purchasing power of exports, which rose at a rate of 5.4 percent. Thus, in the first group the volume of exports grew more slowly, the decline in the purchasing power of exports was more marked, and the net inflow of external financial resources was much smaller; and yet the overall growth rate is higher in this group.

Several different explanations are possible. Generally speaking, reductions of the import coefficient have not stemmed from a long-term policy designed to push economic development beyond the limits set by the growth of external resources. The import coefficient is not normally reduced as a farsighted measure when exports are booming but during slumps, when exports drop or falter, and countries find themselves constrained to take steps to restrict imports in order to correct external imbalances. It is hardly surprising, then, that the relatively satisfactory growth rate of export earnings and other external resources in the second group of countries has in a sense weakened the incentive to import substitution. Moreover, a question to be asked is how far import substitution can be carried in countries, such as those in the second group, which have relatively small markets and where consumption of manufactures—as in most of the Latin American countries—is largely confined to the upper and middle income strata. Lastly, import substitution, and the growth rate in general, also depend to a large extent on the supply of natural resources and the rate of capital formation. Here again, despite the greater inflow of external financial resources, the rate of capital formation has been somewhat lower in the second group of countries. [Discussion of individual countries omitted.]

External Resources and Investment

We come now to a very controversial issue: exactly what the inflow of external financial resources has meant to Latin America. Foreign funds, private and official, have been invested in infrastructure, in

energy, in agricultural improvements and industrial plant, and also in health and education. But the results have not been what they should have been in terms of development, due to policies and conditions that were unfavorable at both the international and domestic levels.

At the international level certain contradictions are manifest. On the one hand, the burden of service payments, amortization and transfers has grown steadily until it reached 4.2 percent of GDP in 1965-68. On the other hand, Latin American trade policies have not been adequate to stimulate export expansion as a means of covering these costs. Few countries have taken positive steps to promote exports, and some of the measures adopted have had unfavorable effects. Equally serious is the fact that very little headway has been made in concerting the necessary industrial integration agreements for production within the region of those goods which tend to be imported in greatly increasing volume as the rate of development climbs. Furthermore, throughout the period under review the purchasing power of exports was seriously affected in all but two countries by deterioration in the terms of trade.

At the internal level, generally speaking, a greater effort could have been made to raise the domestic investment coefficient; consumption has frequently overstepped the bounds within which it should have been contained in order to ensure that the outflows of resources to pay for imported consumer goods did not interfere with investment. There has been a steady decline in the ratio of domestic resources available for investment to the total product, which fell from 17.5 percent in 1950 to 14.5 percent in the period 1965-68. Only Mexico and Argentina were unaffected by the downward trend; in all other countries examined the decrease was very marked. The contrast is sharper when seen as growth rates in per capita terms: while the growth rate of per capita consumption was 2.1 percent, domestic investment resources expanded at a rate of only 1.2 percent, i.e., much more slowly than the 2 percent rate in average per capita product. This steady decline in the coefficient of domestic investment resources cannot be attributed mainly to external factors; it is more the result of what happens at the internal level. Nevertheless, if external capital inflows were greater, and service payments smaller, resources for investment would be increased.

The ratio of the gross inflow of foreign capital to the gross domestic product rose rapidly during the initial years of the period up to 1957-59 when it reached 4 percent of GDP; it then began to decline gradually, although later it recovered some of the ground lost. As the gross inflow of capital rose, outgoings in respect of amortization and transfers increased much more rapidly. Hence the net inflow of capital was substantially reduced, amounting throughout the period to an average of 1.6 percent of GDP. What is more, the volume of remittances of profits and interest abroad remained at a high level. And if these sums—plus amortization and transfers—are deducted, the net inflow

of external financial resources shrinks to a very small proportion of the product. Most serious of all is that this proportion, after rising up to 1957-59, then fell sharply to a minus figure. On average, the net inflow of resources was a minus figure for the period, representing -0.7 percent of GDP. [NOTE: This figure corrected by author.]

The question of foreign capital should be viewed from the standpoint of the balance of payments in a broad context. It would be easy to cite a number of cases in which foreign capital has had a favorable impact in this respect; but there are others in which its influence has been negative. Among the latter, the most important consist in takeovers by foreign interests of enterprises which, besides being in national hands, use technologies that are already well known or easily accessible. What happens in such cases is that the profits which formerly remained in the country are transferred abroad, and the burden of remittances is increased. Furthermore, as the takeover usually brings with it an increase in efficiency, so profits are bigger. It may be justifiable in development strategy for such profits to be large if they represent not only a return on the capital used but also payment for a technology which a country does not yet have at its disposal and which it needs for development purposes. I use the word technology to cover not only production techniques but also the organization of the enterprise and knowledge of external markets. From this standpoint, private foreign investment in certain export activities may be very useful, as regards both extra-regional and intra-regional exports, especially of those goods for which demand grows rapidly with development and for which complex technologies are required that are not for the moment available. In such cases, the best course would be association of foreign companies with Latin American enterprises.

The Growth Rate Needed to Correct Occupational Distortions

It has been argued that Latin America's rate of economic development has not been high enough for the outflow of redundant manpower from agriculture to be absorbed at a satisfactory level of productivity, and at the same time to ensure a rapid rise in average per capita income throughout the economy. We will now try to ascertain the nature and intensity of the effort that will have to be put forth over a given period in order to cure the Latin American economy of so serious a weakness. The point of departure is the distortion in the employment of labor attributable to the economy's lack of the required degree of dynamism. The correction of this anomaly alone would have very significant effects. The assumption first adopted was that during the corrective process the rate of increase of the product per worker both in agriculture and in the industry group would remain the same as in the past. In ten years, by merely getting rid of the distortion in the structure of employment, the rate of economic growth could be raised

to 7 percent (hypothesis one). If, in addition, the rate of increase of the average product per worker were to be speeded up, this would enable a growth rate of 8 percent to be reached by the end of the 1970s (hypothesis two). Both hypotheses are used for methodical analysis of the problem; the second is the more important for analysis of policy implications.

We may begin by setting as a preliminary target the industry group's recovery of its 1950 share in the non-agricultural labor force, taking as given the current levels and growth of product and employment in the three major sectors. As capital formation proceeded and permitted the progressive absorption of the redundant labor force, the average annual growth rate of the aggregate product of the economy would gradually increase from the preceding 5.2 percent to 7 percent by the end of the 1970s, assuming growth rates of the product per worker in agriculture and in the industry group no higher than before. How would it be possible under such conditions to attain an average rate of 7 percent, signifying an average annual increase of 3.9 percent in the per capita product for the economy as a whole? In brief, the explanation is as follows: the overflow of redundant manpower from agriculture, instead of simply pouring into the services sector, would be drawn into the industry group, where the average product per worker is much higher than in agriculture or services. Moreover, as the considerable volume of redundant manpower now existing in the services sector was reduced, here too the product per worker would increase. Hence by the end of the 1970s the product per worker in all these non-agricultural activities would be 3.2 times as high as in agriculture. The switchover of manpower from activities in which the product per worker is low to others in which it is much higher suffices, therefore, to bring about this appreciable improvement in the growth of the economy as a whole.

If a 7 percent growth rate of the product were reached by the end of the first decade and maintained during the second, it would represent a considerable increase in demand in the various sectors of the economy. Agriculture, thanks to the expansion of production to satisfy this greater demand, would need to retain a larger labor force than in the past. In 1950-65, the agricultural labor force seems to have increased at an average annual rate of 1.5 percent. By the end of the 1970s this rate would have climbed to 2.7 percent; later, towards the end of the second decade, it would fall to 2.1 percent, inasmuch as with the rise in income levels the income-elasticity of demand for agricultural products would presumably decrease. This calculation is socially meaningful, since it shows that the rate of retention of workers in agriculture would be higher than before with the product per worker in that sector continuing to increase at the same rate as in the past. Would this be a desirable assumption, from the standpoint of the social integration of the rural masses? The average annual rate of increase of the product

per worker in agriculture was not negligible in the past (2.2 percent). But except in a few cases it does not seem to have brought about a correlative improvement in the income of the rural population. To that end, an indispensable requisite—apart from other measures—would be the reform of the land tenure system; this would be important enough in itself. But if the aim was to accelerate the social integration process, the former growth rate of the agricultural product per worker would have to be raised.

In reality, it would seem that agriculture could hardly make the vigorous production effort required for the satisfaction of the increased demand unless such an acceleration of the growth rate of the product per worker were achieved by means of more rational land use and improved techniques. It is therefore assumed, in our second hypothesis, that the rate in question will gradually rise from 2.2 percent to 4 percent by the end of the first decade, and will remain at that level during the 1980s. The more effort is made to step up the product per worker in this way, however, the less will be the labor-retaining capacity of agriculture, and the exodus from the agricultural sector will increase. The dilemma is obvious. Clearly, a smaller exodus of agricultural workers simplifies the problem of manpower absorption in the industry group, with significant but far from fully satisfactory results: agriculture will lag behind, just as before. The only way to accelerate its development is to raise the rate of increase of its product per worker.

If this were achieved, a much more intensive effort would have to be made to absorb manpower outside the agricultural sector than would be implied in reaching an average annual growth rate of 7 percent. Demand and employment in all the other sectors would have to expand considerably. And with respect to the industry group too, it is questionable whether such an expansion would be compatible with the assumption that there would be no change in the 3 percent rate of increase recorded for the productivity in this sector in the past. The upswing in demand, and possibly brisker competition, would encourage greater efforts to improve the average product per worker, which is accordingly assumed to increase by 4 percent per annum in the industry group as well. This is a somewhat arbitrary assumption, but it gives a clearer idea of the nature of the problem. If in both agriculture and in the industry group the average annual growth rate of the product per worker reached 4 percent by the end of the 1970s, the rate of development would gradually increase until by the end of the first decade it had risen to 8 percent, at which level it would remain during the second decade.

Both hypotheses would imply significant changes in the composition of demand. In the light of past experience in Latin America and that of the developed countries at a similar stage in their growth, demand for the goods produced by the industry group is liable to expand much

faster than demand for agricultural products, with services midway between the two. These changes in demand, and the assumptions adopted with respect to the product per worker, account for the differing degrees of intensity with which manpower is abosrbed outside agriculture. The combined implications of the two hypotheses for growth rates of manpower, product and productivity in the three major sectors are shown in Table 2.

Table 2: Latin America: Cumulative Annual Growth Rates of Aggregate Product, Product per Worker and Labor Force in Agriculture, Industry and Services with Two Growth Hypotheses (Percentages)

	Product					
	Aggregate		Per Worker		Labor Force	
Overall Growth Hypotheses[a]	7%	8%	7%	8%	7%	8%
Growth in Agriculture						
1950-65	3.8		2.2		1.5	
1979/80	5.0	5.4	2.2	4.0	2.7	1.3
1989/90	4.4	4.7	2.2	4.0	2.1	0.7
Growth in Industry Group[b]						
1950-65	5.9		3.0		2.8	
1979/80	8.3	9.7	3.0	4.0	5.2	5.5
1989/90	8.3	9.7	3.0	4.0	5.2	5.5
Growth in Services[c]						
1950-65	5.3		1.4		3.8	
1979/80	6.7	7.6	4.3	4.3	2.3	3.2
1989/90	6.6	7.4	4.0	4.1	2.4	3.1

SOURCE: Latin American Institute for Economic and Social Planning.

a/ Hypotheses are that annual growth rates for gross domestic product will be 7% and 8% respectively by 1980 and through to 1990.

b/ Includes industry, construction and mining.

c/ Includes unemployed.

In agriculture the rate at which employment increases is higher than in the past on the 7 percent hypothesis; but it is lower on the 8 percent hypothesis, for although the expansion of production is greater its effects on employment are more than offset by those of the rise in the product per worker. In the industry group the past annual rate of labor absorption was barely 2.8 percent, hardly exceeding the total increase in the labor force. In the next two decades this rate would have to be substantially accelerated: on the 8 percent hypothesis the rate in question would rise to 5.5 percent, while it would reach a slightly lower level (5.2 percent) if the rate of development were 7 percent. Of no less interest is the evolution of services. As noted earlier, a major

portion of the redundant manpower that could not be absorbed in the industry group ended up in the services sector where its absorption was largely spurious; and overt unemployment was included under this head. Thus the labor force in services expanded at an annual rate of 3.8 percent in 1950-65 when the total labor force increased by only 2.6 percent. It is estimated that in the next two decades the average annual growth rate of the total labor force will be 3 percent, owing to the rate of increase of the population. With the 7 percent hypothesis, labor in the services sector would expand more slowly than the total labor force, at rates of 2.3 and 2.4 percent in the 1970s and 1980s respectively. Given the 8 percent hypothesis, on the other hand, it would increase faster than the total, at rates of 3.2 percent in the 1970s and 3.1 percent in the 1980s. What would happen is that instead of the redundancy's increasing as before, the more rapid growth of per capita income implied by the 8 percent rate would also speed up the expansion of those services in which employment tends to increase as development proceeds. Thus, the services sector would increase its labor force much less than its aggregate product, since it would gradually reabsorb its own redundant manpower including the unemployed into "genuine" (i.e., more productive) employment, and the average annual growth rate of the sectoral productivity, which used to be very low (1.4 percent), would exceed 4 percent in the 1970s and 1980s. Finally, in connection with the initial point of reference, i.e., the restoration of the share of the industry group in the non-agricultural labor force to its 1950 level of 35 percent: this would be approached by 1980 under the 7 percent growth hypothesis, and with the 8 percent hypothesis it would be reached in the late 1980s.

Significance of the projections. Our estimates relate to Latin America as a whole, and they mask considerable inter-country differences. It is essential for each country to formulate its own projections: enough progress has been made in the relevant techniques for the task to be undertaken, and as results are achieved, it will be possible to arrive at new and more realistic approximations for Latin America as a whole. Such exercises are not prompted by mere theoretical curiosity as to the possible course of development; they are of great practical interest. Without them, it would be impossible to define major features of the development strategy by which planning activities are to be guided. If the basic premise here is a hypothetical rate of development of 8 percent per annum, it is not because this rate is considered preferable to any other, but because it would mean that the economy's lack of dynamism, measured in concrete terms, could be made good within a reasonable space of time. No forecasts are offered as to whether the requisite conditions for dynamic growth will or will not be fulfilled. A different but very important aim is pursued: to show that their fulfillment is a sine qua non for achieving the rate of development which will bring the objectives under discussion within reach. Projections are a factor of persuasion in the formulation of a

development strategy and policy, besides shedding light on the requirements implicit in a specific rate of growth.

Except in a few cases, these problems have not yet been the object of enough attention in Latin America, nor have statistics been improved sufficiently for them to be studied in depth. In the last two decades great progress has been made in statistical and econometric techniques in Latin America, and those trained in them handle them with astonishing skill, but the statistics themselves show no corresponding improvement. They are just as defective as before, and there is some risk that the very precision of the calculation process may make us lose sight of the innate flaws in the raw material. Nor has much headway been made at the international level with regard to the problems under review. The Indicative World Plan of the United Nations Food and Agriculture Organization (FAO) takes no account of how the possible development of agricultural production and the introduction of more advanced techniques may affect the retention of manpower in the agricultural sector. Neither does this question seem to have been considered as yet in studies on the Second Development Decade. The relatively recent effort of the International Labor Office (ILO) to study employment problems in selected countries is a very timely move.

If the average annual rate of development for Latin America is to be raised to 8 percent in the course of a decade, the effort made will have to be exceptional in its nature, and on an exceptional scale. This does not mean that great difficulties have not had to be faced in the past, but those that will have to be overcome now are much greater. The region had to strive hard to recover from the decline in its export trade, and did so mainly through import substitution. Import substitution with an internal market, however, is not the same thing as exporting manufactured goods to markets that will have to be painstakingly opened up. Equally difficult will be the problem of capital formation; the region will have to embark upon a far more intensive mobilization of internal resources. And the very conception of Latin American development has not yet properly assimilated a vital fact: the population explosion. The implications of demographic growth create an imperative need to seek new ways of influencing the forces of development.

Requirements in Particular Sectors

Agriculture. Whereas in 1950-65 the annual average rate of increase of agricultural production was 3.8 percent, the 8 percent hypothesis would imply that the average over the 1970s and 1980s would be 4.8 percent. How could the agricultural sector meet so exigent a requirement? Perhaps in no other field is the development economist so liable to be involuntarily caught up in dangerous generalizations such as those relating to agrarian reform, the technological revolution—"the green revolution"—, the need to improve diet, and other matters of unques-

tionable importance. The perfecting of econometric exercises will not help us much until more progress is made towards a thorough knowledge of the agricultural situation through new research that will gradually fill the present wide gap between macroeconomic estimates and a number of microanalyses of specific problems. It is urgently necessary for agricultural experts and development economists to join forces in pressing on from the generalized approach to systematic factual analysis.

How far will the agricultural sector be able to satisfy the accelerated increase in internal demand by bringing new land under cultivation? It is often said that there are still vast tracts of virgin ground in Latin America; much talk is heard of tropical agriculture and its immense potentialities. But how much progress has been made in research on ecology and on methods of exploiting these potentialities? It is common knowledge that making new land accessible involves heavy investment in infrastructure, which has to be carefully weighed against other investment requirements. The stress laid on extending the frontier of agriculture is sometimes due to unwillingness to admit the need for changes in the land tenure system. There can be no question that more efficient land use and more productive employment of agricultural labor, apart from its social significance, would be economically sounder than opening up new land at the cost of substantial investment in infrastructure.

The situation varies from one country to another. As the possibilities for more efficient utilization of existing and easily accessible resources are gradually exhausted, the alternative to the opening-up of new land by investment in infrastructure is the expansion of yields by the introduction of new techniques. The latter also calls for investment—in technological research and training, as well as in production of fertilizers. In practice, mechanization and the techniques that improve unit yields are creating a marked duality in the agricultural sector of some Latin American countries. If demand becomes much brisker than in the past, the modernization process is likely to gain powerful momentum. In the long run, it will not be possible to achieve or maintain a high rate of development unless agriculture is modernized. But if modernization does in fact make steady progress, this duality may be aggravated: the large-scale agricultural entrepreneur will employ relatively little manpower, and in traditional farming redundancy will continue to increase. This is not a prophecy: it is a fait accompli in certain countries—in Mexico, for example, where under-absorption of labor in the new agriculture exists side by side with the absorption of more and more manpower in traditional farming. It is true that the land reform has liberated the agricultural worker from an outdated social system, but it has not been able to provide more land than there always was. The new techniques are also finding their way into the small farms, but the result is additional redundancy. Only the attainment of a higher rate of development can gradually relieve this situation until a reasonable balance can be struck between human resources and the land.

Industry. How far will industry be able to cope with the increase in demand? As in agriculture, the boom in demand is likely to be accompanied by a higher growth rate of the product per worker than in the past. In the first place, there is considerable idle capacity. Keeping machinery permanently in operation through the increase of work shifts would allow the absorption of manpower to be stepped up appreciably, especially if obstacles on the labor side, which make it difficult to adopt this system at present, could be removed. Next, the enlargement of domestic markets would permit specialization in production and more economic plant sizes, with consequent improvement in productivity. Furthermore, as industrial output would expand much faster than in the past, the labor force in artisan-type industry could be more quickly absorbed, and the average product per worker would then be increased ipso facto. Lastly, external competition within the framework of inter-Latin American trade may constitute an important factor in the expansion of productivity. Much emphasis has been placed on this in the present report. Of course, competition must be introduced by gradual degrees, for industry must be given time to adapt itself to the new conditions. But when this process of adaptation evolves alongside the expansion of demand, less difficulty is experienced than when demand increases at a sluggish pace.

The integration of key industries in the Latin American region cannot be deferred for long, since it is a step of primary importance if a higher growth rate is to be achieved. Any considerable increase in investment requirements will have to be met largely through the production of capital goods within Latin America.

Services. In many countries surplus manpower is a cause of concern, especially in the public services which are obliged to employ people for whom there is no room in the industry group. Merely getting rid of redundant staff and shutting one's eyes to the consequences, turning disguised into overt unemployment or into other forms of redundancy, would be no solution at all. The same might be said of the marketing of agricultural commodities and of retail trade. They follow outdated patterns which still persist—though less than before.

With accelerated development, as goods production rises, the basic services, trade and transport will be able to absorb their own redundant labor and increase their product per worker. These are labor-absorbing activities. In the labor-expelling activities too—especially the immense range of unskilled jobs—income levels will also improve as the proportion of the labor force that used to find its way into these occupations gradually declines, and structural unemployment may be reduced. But its evolution will be slow, since the transfer of redundant manpower from agriculture to the services sector has been going on for two decades.

Foreign Trade Requirements

The first and most essential requirement of an 8 percent growth rate relates to imports. Acceleration of the growth rate of the product brings with it significant changes in the composition of aggregate demand in the economy, which influence import requirements. According to estimates prepared jointly by ECLA and the Institute, an 8 percent growth rate in GDP will require an 8.8 percent rate of increase in imports. A higher growth rate means a higher rate of investment, and capital goods still have to be imported on a substantial scale. This poses a major problem: how can the region afford an 8.8 percent growth rate of demand for imports by the end of the current decade?

The question will be briefly analyzed using carefully-prepared projections summarized in Table 3. A first possibility is the expansion of existing types of exports, calculated at 4.9 percent on the basis of current trends in exports and an estimate of the prospects for their development. Secondly, the assumption is adopted that the net inflow of external financing would cover 0.4 percent in the import growth rate. Total external resources accruing from these sources would represent 5.3 percent of the rate in question; the portion remaining to be covered would be 3.5 percent. How would it be possible to make up this difference? There are no alternatives but to promote the intensive development of industrial exports to the rest of the world, which might add 0.5 percent to the growth of external resources; and to pursue import substitution much more energetically than before, from which a contribution of 3.0 percent might be expected. In my own view, given existing conditions in Latin America, this substitution policy would have to be resolutely founded on regional and subregional integration of basic industries. These figures in no way represent a forecast, or even targets; their purpose is to give an idea of the various directions in which efforts should be made and of their order of magnitude. If some of these efforts are not as vigorous as they should be, others will have to be intensified in compensation, if a rate of development that will remedy the economy's lack of the required dynamism is to be attained. For example, if exports fail to expand as indicated above, it will be essential to step up the import substitution process; and if that proves overwhelmingly difficult, the only recourse would be to obtain a larger net inflow of external financing.

The average annual growth rate of total exports outside the region is assumed to be 5.4 percent, an estimate of rates that might be attainable, as far as can be judged from currently available data. Traditional primary exports are included under this head, and another assumption adopted is that in addition to the increase resulting from the growth of world demand for these commodities, trade in some of them would expand considerably by virtue of certain programs that

Table 3: Latin America: Means of Covering the Potential Demand for Imports Corresponding to an 8 Percent Growth Rate of the Product at the End of the Current Decade

	Percentages	
1. Annual growth rate of the demand for imports that would have to be satisfied	8.8	
2. Means of covering this demand		
- Expansion of traditional and non-industrial exports	4.9	
- New industrial export lines outside Latin America	0.5	
- Import Substitution	3.0	
On a national basis		0.8
On a regional basis, by inter-American trade		2.2
- Net inflow of external financial resources	0.4	

SOURCE: Latin American Institute for Economic and Social Planning.

are underway. Cases in point are copper in Chile and Peru, tin and petroleum in Bolivia, and possible new agricultural export lines—e.g., tropical products, such as are being developed in some Latin American countries. Another example is the effort to promote tourism.

In recent years, exports of manufactured goods to the rest of the world have increased at a rate of 9.2 percent. This reflects the promising industrial export drive started some years ago by several of the Latin American countries. But an even more vigorous effort would have to be made if appreciably higher rates were to be attained. What rates? Australia, Finland, Spain and Yugoslavia have been successful in this direction, and the composition of their industrial exports has been studied. On the assumption that in each of the groups of goods analyzed Latin America could make an effort similar to the action taken by these four countries, it is estimated that the region could expand its industrial exports at an annual rate of about 15 percent. Any greater increase could not reasonably be projected for the coming decade.

Combining the growth rate of 9.2 percent in industrial exports to the rest of the world with that of intra-regional exports, which increased at an annual rate of 25.5 percent, the aggregate growth rate of industrial exports between 1961 and 1967 was 12.4 percent. The composition of intra-regional exports of manufactures differs substantially from that of Latin America's exports to the rest of the world. The latter are generally characterized by simpler processing and slower growth rates, e.g., food items—canned meat, fruit and vegetables—and petroleum products. In contrast, goods produced by industries in which more ad-

vanced techniques are used and the proportion of industrial value added is higher are traded mainly within Latin America. On an average, more than two thirds of the products of the metal-transforming industries are intended for the region's markets, and in some cases almost 100 percent. The fact that the promising expansion which has taken place has been confined to very few goods and largely to inter-Latin American trade is suggestive of the prospects that would be opened up if the number of products were increased and an endeavor were made to seek advantageous outlets in the rest of the world. The development of these manufactures would have an increasingly powerful impact on the internal industrial structure in Latin American countries as well. Should the assumptions presented in Table 3 be fulfilled, the share of industrial exports in Latin America's total external sales would rise from its present level of about 9 percent to some 17 percent in one decade, and, if the same rate of growth were kept up, to approximately 40 percent in two decades. This would lead to the metamorphosis of an outdated structure of foreign trade. The region would gain a steadily increasing share in the more dynamic international trade flows and shake off its dependence upon the fluctuating markets for primary commodities.

It will be essential for all the countries of the region to adopt a number of measures such as have already been very successfully applied by some of them: for example, the abrogation of a number of taxes that increase the burden of industrial costs. Promotional action is needed, ranging from technical and financial assistance to increase productivity to market studies and export credits. Industrial competition must be progressively encouraged to secure increased in productivity and improvements in quality in order to compete in world markets. The role of private foreign investment, whether through the transfer of technology or through knowledge of external markets, may be of great importance for industrial exports, especially sales to the rest of the world. The policy to be pursued should be to encourage such investment while ensuring that, except in special cases, it is effected in combination with domestic enterprise.

The hypotheses presented above demonstrate the need for Latin American countries to use the recently-created machinery to obtain a progressive relaxation of restrictions hindering the entry of their goods into the United States, and for this machinery to be extended to other industrial centers. To this end, the region should continue to join forces with the other developing countries in the campaign being conducted through UNCTAD at the world level. The same might be said of the pursuit of general and non-discriminatory preferential treatment for industrial imports in the tariffs of the developed countries. This would be a valuable incentive, but by no means sufficient in itself; preferences would simply afford opportunities, and it would be up to the Latin American countries to take advantage of them. In

light of my experience in UNCTAD, I think the Latin American countries could carry much greater weight in the determination of trade issues if they showed themselves resolved on their own part to give vigorous impetus to their reciprocal trade. They have not done so hitherto; they have urged the industrial centers to adopt a trade policy favorable to Latin America's exports, but they are far from having displayed the same zeal in the cause of inter-Latin American trade.

Regional cooperation. Import substitution on a regional basis means that each country, instead of substituting domestic production for a wide range of goods imported from the rest of the world, would import some of these items from other Latin American countries, to which it would export its own manufactures in return. Private enterprise, especially in the industries based on foreign investment, has up to now moved ahead of the governments of the region in this respect. In alluding to the regional market, I have in mind no special form of such a market but simply a joint effort made by a number of the Latin American countries—not necessarily all of them—to relieve the external sector bottleneck. The ideal formula would be for all of Latin America to be drawn in as soon as possible, but this does not detract from the value of more limited arrangements, provided that the parties to them regard what they are doing as a stage on the road towards the regional common market.

This applies particularly to the Andean Group. According to preliminary studies made by ECLA and the Institute at the request of the Planning Offices of the countries signing the Cartagena Agreement, an average annual rate of development of 6.5 percent between now and 1985 would imply a potential demand for imports expanding at a rate of 9.2 percent, whereas the relevant projection places the annual growth rate of the purchasing power of traditional exports at 3.6 percent. A first approximate estimate of substitution possibilities within the Andean Group suggests that the aforesaid rate of 9.2 percent might be reduced to 6.5 percent. A wide margin (6.5 minus 3.6 percent) would thus remain to be covered by achieving a more rapid rate of increase for exports both to the rest of the world and to Latin American countries outside the Group. The higher level of industrial efficiency attained in the Andean Group would presumably be a major factor in stepping up the exports in question. One specific experiment in joint action at the subregional level already exists in the shape of the Central American Common Market, and the rapid growth of inter-Central American trade has signified an intensive import substitution process.

To return to the projections relating to Latin America as a whole: it is assumed that the contribution of import substitution efforts of a purely national character would cover 0.8 percent of the growth rate of demand for imports (based on past trends), and that the remaining 2.2 percent would have to be coped with by means of regional import substi-

tution. It would be interesting to see what this process would mean for the import coefficient of Latin America as a whole, which is currently 11.5 percent; if the substitution process were not carried farther in the coming decade it would rise to 14.2 percent. The value of this hypothetical estimate—in the writer's view it could not be fulfilled—lies in giving an idea of the magnitude of the substitution process that is required. Meanwhile, if imports from the rest of the world were replaced by domestic production as envisaged in Table 3, the coefficient would be reduced from 14.2 to 10.2 percent. If this coefficient is viewed in relation to the imports of those Latin American countries which have reached the most advanced stage in the substitution process—in particular, Brazil—it does not seem exceptionally low; but if it is compared with those of industrialized countries elsewhere it turns out to be lower than many of them. It is higher than the coefficient for the U.S., equivalent to that of Japan or France, and lower than that in England, Germany, Canada, Italy, Holland or Finland.

External Financial Resources Required

I consider that, due to shortcomings both in international cooperation and in the development measures taken by the Latin American countries, the foreign capital received has not succeeded in fulfilling two primary developmental objectives: 1) to promote the mobilization of domestic investment resources until they suffice for the maintenance of a satisfactory rate of growth; and 2) to contribute to the progressive alleviation and ultimate elimination of the external sector bottleneck in the economy. To be sure, the period of transition from an inadequate to an adequate rate of development is bound to be difficult, for the rate must be adequate to ensure not only the productive employment of manpower but also the attainment of these two objectives. It is by no means essential that both should be attained at the same time.

With regard to the point at which domestic saving suffices for the maintenance of an appropriate rate of growth: a country cannot continue borrowing from abroad indefinitely. Adequate domestic investment resources must be a primary objective. Accordingly, as a given country gradually approaches this goal, a time will come when the net inflow of foreign capital, after attaining a maximum, begins to diminish. Meanwhile, the amount represented by payments of interest and profits naturally continues to increase. And in time these service payments first come to equal the net inflow of new capital and later to exceed it; thus a net outflow of funds takes place. Such is the logical evolution of the process, but this evolution has not taken place in Latin America. The net inflow of funds from abroad has progressively diminished, and in many cases the stage of a net outflow of resources has been reached, long before the essential changes have been effected in the structure of foreign trade, and also long before the capacity to generate domestic saving has become adequate. Herein lies the basic flaw. The stage of

remitting funds abroad in excess of the net capital received is of course inevitable; it is bound to come sooner or later. The only trouble is that the Latin American countries have gradually approached and some have actually reached it abnormally far ahead of the proper time. According to our hypothesis (which is not based on complacent assumptions with regard to domestic effort—quite the contrary) the Latin American economy as a whole would attain sufficient maturity to cope with the effects of the logical evolution described only in the 1980s where savings are concerned, and later still in respect of external financial resources—always provided that the postulated foreign trade effort is made to good effect and that a reasonable international cooperation policy is applied.

What could be considered a reasonable financial cooperation policy? Reasonable on both sides: on the Latin American side, where it should be accompanied by stringent measures to ensure the progressive increase of the domestic saving coefficient, as well as efficacious foreign trade measures; and on the international side, where it is assumed that by 1975 the net transfer of capital would reach the target of 1 percent of the gross product of the industrialized countries as recommended by the United Nations and adopted up to a point in the Pearson Report. Latin America's share in the net transfers of capital, as recommended by UNCTAD, is 15 percent (its past share was larger, at times well over 20 percent). If the target indicated were reached in the year suggested, and if approximately the same proportion were maintained thereafter, the net inflow of foreign capital would make a significant contribution to meeting the requirements implied in our hypothesis.

Let us now consider the terms of this reasonable policy. If the burden of financial remittances—profits and interest, amortization and debt repayment—were eased in the manner about to be described, it would not be necessary to obtain a larger gross inflow of foreign capital than in 1966-68. Accordingly, as a benchmark, an amount slightly smaller than the average for that three year period is postulated; and it is assumed that this quantity would gradually increase in accordance with the assumptions mentioned above, namely, that by 1975 the 1 percent target for net transfers of capital would be reached, and that 15 percent of these transfers would fall to the share of Latin America. If these assumptions are fulfilled, the proportion of Latin America's gross product represented by the gross inflow of capital will gradually decrease. In 1966-68 this proportion was 3.8 percent, but the product has continued to increase; for our present purposes, it is assumed to be initially 3 percent of the product. If internal measures were duly taken to raise the savings coefficient, this proportion would not be maintained, but would gradually decrease. According to our hypothesis, the growth rate of the gross product in Latin America as a whole will rise to 8 percent in 1980, whereas the estimate of transfers of capital from the developed countries is based on the assumption that

they will continue to increase their gross product as in the period 1957-67, i.e., at the slower annual rate of 4.5 percent.

Outgoings for amortization and debt repayment have been really very heavy, and an additional drain has been the flight of domestic capital abroad, totalling sums which cannot be reliably estimated. It is thus of primary importance to stretch out the amortization period, adjusting it to the capacity for external payments. Not long ago President Nixon stressed the necessity of easing the load; as a result, the Inter-American Committee on the Alliance for Progress (CIAP) has been asked to present specific proposals which are now under study. In the meantime, estimates based on two recent reports are used here. The Pearson report recommends cutting down annual rates of interest on official loans to not more than 2 percent, which implies heavily subsidizing the rates of interest in question; while another (unpublished) report considers it reasonable that service payments on the external debt outstanding should be reduced to 10 percent, of which 6 percent would correspond to interest and 4 percent to amortization payments. The estimates given here present these two alternatives for the rates of interest—2 percent (alternative A) and 6 percent (alternative B)—and an amortization rate of 4 percent in both cases. Combining these various assumptions, net capital inflow would initially constitute 1.77 percent of product, rising to 2.09 percent in 1975 and declining gradually thereafter. The net inflow of financial resources would: rise to positive values, with a 1975 peak of 0.4 percent of product, under alternative A; remain negative under alternative B, but not exceed -0.5 percent of product.

The alleviation of the external bottleneck will also call for clearly defined and continuing cooperation on the part of international credit institutions, in addition to the technical assistance needed. The International Bank for Reconstruction and Development (IBRD) and the Inter-American Development Bank (IDB) are called upon to play an important part in financing the projects concerned, whether they relate to the promotion of exports to the rest of the world or to regional or subregional import substitution. The IBRD group, by virtue of its wide experience and its important links with the industrialized countries, could give vigorous support to projects concerning exports to the rest of the world. On the other hand, IDB, because of its experience in the countries of the region and its close contact with their economic and political situations, should play a stronger part in the promotion and financing of subregional and regional import substitution projects.

If the moment were politically opportune, and the governments felt it to be so, one of the most important examples of this pooling of effort might be the formulation of an integration program for the iron and steel industry. Latin America has already learned to produce iron and steel; the industry is almost entirely in national hands. All

that is lacking is to make it economic through the expansion of markets and the rational distribution of production. Preliminary studies have shown that integration could result in a saving of investment and a reduction of costs in this industry so fundamental to the manufacture of capital goods. None of the countries currently producing iron and steel would have to cease doing so; they would simply manufacture a different range of products on much more economically sound and rational bases. Apart from its economic significance, starting the integration process with this industry would be of unquestionable political importance; it would afford a shining example of what a purely Latin American multinational enterprise could be.

[NOTE: for discussion of capital formation requirements for the 8 percent annual growth projection, see pp. 44-49 above.]

The Technique and Political Art of Development

The effort entailed in giving the economy the requisite additional dynamism will be very great and very complex. Can such an effort possibly be made in Latin America? And, at the same time, will it be possible to induce the industrialized countries to adopt a clearsighted policy of international cooperation?

The world would have made very little headway if the triumph of an idea had been fought for only when the probabilities of success were great. Conviction is what matters, and it is with deep-rooted conviction that I write these pages. They are a summons to rationality and foresight. They are addressed to the holders of a whole range of opinions. To those who do not want change, in order to show them that it will come in any event—since the Latin American economy cannot go on as it is, with its seriously inadequate dynamism—and to open their eyes to the supreme importance of the political and social cost of failing to bring the changes about in time. To others, who are convinced of the need for these changes, in order to discuss with them the inexorable demands of hard fact and to look calmly and objectively at the political assumptions underlying the various methods of influencing economic forces. And to those who want to destroy in order to rebuild on new and radically different lines, so that their model can be considered in relation to those inescapable terms imposed by reality itself, and to certain imperative demands of the present state of world affairs.

We should not allow the turmoil of politics and ideological controversy to trouble us too much, because in Latin America there is a substantial fund of common sense, and in this patrimony the masses too have their share. I am certain that a clear, honest and persistent presentation of the great problem of development can clear the way for new ideas—ideas which will enable each of the social groups to understand that the discipline asked of it will not be in vain. I do not think

it fanciful to suppose that a large measure of agreement can be reached on basic points in a development strategy, especially on those which cannot be side-stepped if the necessity of accelerating development is universally recognized. In any case, a vast field of major differences would still remain, chiefly in connection with the ways and means of distributing the burden of capital formation entailed by development. It would be well worthwhile even to reach agreement on the need for this capital formation and on the proportions it should attain.

And also insight into the present and its immediate needs. A strategy which shelved these questions would not be politically viable. It is a great temptation to establish targets for ten years hence and demonstrate their feasibility with the logic that will then be valid, not with the logic of today, and today's pressing demands. Hence this report emphasizes the necessity of starting this strategy with an expansionist policy which, while taking into account the immediate needs that will not brook delay, will at the same time initiate the far-reaching measures which will gradually bear fruit in the course of the decade. This decade has already begun. Time will not solve problems of its own accord but, on the contrary, steadily makes them worse; this is what has been happening in Latin America. If wait we must, let us not wait too long.

[Excerpted from Change and Development: Latin America's Great Task. Report Submitted to the Inter-American Development Bank. New York: Praeger Publishers, Inc., 1971, pp. 3-4, 23, 29-32, 36-37, 42-59, 76-77, 81-92, 97-122, 136-137 and 143-144. Copyright © 1971 by Praeger Publishers, Inc. Reprinted with Permission.]

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